

**STATE OF NEW HAMPSHIRE**  
**SITE EVALUATION COMMITTEE**

**September 18, 2018 - 1:54 p.m.**  
49 Donovan Street  
Concord, New Hampshire

**DAY 4**  
**Afternoon Session ONLY**

*{Electronically filed with SEC 10-01-18}*

**IN RE:       SEC DOCKET NO. 2015-04**  
**Application of Public**  
**Service of New Hampshire**  
**d/b/a Eversource**  
**Energy for Certificate**  
**of Site and Facility**  
**(Adjudicative Hearing)**

**PRESENT FOR SUBCOMMITTEE/SITE EVALUATION COMMITTEE:**

<b>Patricia Weathersby</b> <i>(Presiding Officer)</i>	Public Member
<b>David Shulock</b>	Public Utilities Comm.
<b>Dir. Elizabeth Muzzey</b>	Div. of Hist. Resources
<b>Charles Schmidt, Admin.</b>	Dept. of Transportation
<b>Dir. Christopher Way</b>	Div. of Economic Dev.
<b>Michael Fitzgerald</b>	Dept. of Env. Services
<b>Susan Duprey</b>	Public Member

**ALSO PRESENT FOR THE SEC:**

**Michael J. Iacopino, Esq.**       Counsel for SEC  
*(Brennan, Lenehan, Iacopino & Hickey)*

**Pamela G. Monroe, SEC Administrator**

*(No Appearances Taken)*

**COURT REPORTER: Cynthia Foster, LCR No. 14**



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**P R O C E E D I N G S****(Hearing resumed at 1:54 p.m.)****ROBERT ANDREW, PREVIOUSLY SWORN**

PRESIDING OFFICER WEATHERSBY: Good morning. We will resume the hearing. Next is questions from the Subcommittee. Anybody have questions they'd like to start with? Ms. Duprey?

MS. DUPREY: Thank you, Madam Chair.

**QUESTIONS BY MS. DUPREY:**

Q Good afternoon, Mr. Andrew.

A Good afternoon.

Q A couple of the questions that I'm going to ask are a reiteration of questions that I asked of other witnesses, and you seem to possibly be the more appropriate person and more expert person so I just want to get your take on that.

A Um-hum.

Q So one of the questions that I asked yesterday was, and I apologize, I can't remember whose testimony it was in, but I believe that I read in testimony that since SRP was chosen, or the Madbury/Portsmouth line or whatever it is, chosen over the Gosling Road alternative, and

1           that happened back in 2012, that other decisions  
2           have been made along the lines and other  
3           projects that have been built as time has gone  
4           on based on that assumption that would have been  
5           different if the Gosling Road alternative had  
6           been chosen. And that to some degree, at least,  
7           this die is cast, if you will, in terms of the  
8           Madbury/Seacoast area where otherwise we may  
9           have, besides just this suite of projects that  
10          SRP is a part of, that there may be other  
11          projects that would be rendered less effective  
12          or obsolete were it to be switched back to  
13          Gosling Road. Could you comment on that?

14        A    Yes. I mean, I think there's, the problems were  
15          identified in the Seacoast region by the  
16          original ISO Needs Assessment. Then the  
17          Planning Group looked at how to solve them, and  
18          they came up with two different philosophies.  
19          One philosophy was to reinforce the existing 115  
20          lines that are there and add another and that  
21          solved the problems, and that is the Seacoast  
22          Reliability "suite," if you would call it that.

23                The other approach was to add another  
24          source to the area, and the source being large

1 autotransformers and that being the Gosling Road  
2 approach. Years ago that was also referred to  
3 as the Newington Auto. So that's not a new  
4 idea. It's an idea that's been around for a  
5 long time, too. But with the Newington Auto and  
6 the Gosling Road Auto and that new injection of  
7 power into the existing infrastructure, the  
8 existing structure cannot take it. So there are  
9 several lines that have to be rebuilt and  
10 reconducted to a higher capacity, one new line  
11 that needs to be built, and I think there are  
12 five substations that need major work within the  
13 fence reinforcing the facilities that are there  
14 for that package to work.

15 Now, that package does not overlap with the  
16 SRP-based package of "Solutions." So when the  
17 ISO is deciding how to do it, they were looking  
18 at the effectiveness of them, both met the  
19 ten-year planning horizon. So they were, they  
20 were acceptable from the ISO's point of view.  
21 Then they start to look at cost, and then they  
22 start to take a look at any other features of  
23 projects that, you know, redeeming value that  
24 you may want to consider, and those were the

1 factors that were in the Power Point  
2 presentation we were looking at.

3 So Gosling Road is a package, and the  
4 Seacoast Reliability Project in the line  
5 upgrades is another package, and to a large  
6 extent they're exclusive of each other, pretty  
7 much totally exclusive of each other.

8 Now, within the Seacoast Reliability  
9 package, what the ISO approved was the concept  
10 of a line from Madbury to Portsmouth. How we  
11 get from Point A to Point B, overhead,  
12 underground, things, that's route selection. So  
13 from the ISO's perspective, as long as the line  
14 connects these two points, and it creates enough  
15 capacity, it's big enough, it's an acceptable  
16 solution.

17 Q I don't think that's quite the question that I  
18 had. So let me try to be a little clearer with  
19 it.

20 Once the Madbury/Portsmouth was selected, I  
21 realize that the Gosling Road suite wouldn't get  
22 built, but my understanding, I believe, from the  
23 Prefiled Testimony, and I'll try to check that  
24 tonight and find that, I believe that what I

1 read was that there are other decisions that  
2 have been made by ISO since then in other parts  
3 perhaps of the grid that would be rendered less  
4 effective or less useful or money that might  
5 have not been wisely spent if we were to, if  
6 Gosling Road was to suddenly be the selected  
7 alternative at this point?

8 A Well, I think the issue then would be in the  
9 Seacoast Reliability package, there's already  
10 approximately \$50 million of expenditures --

11 Q Right.

12 A -- that have been done.

13 Q You think that's what it was referring to?

14 A I think that's what it was referring to.

15 Q I didn't think that it was, but I'll go back and  
16 look more carefully. All right.

17 My understanding also from your testimony  
18 and other's testimony though is that ISO reviews  
19 its project list annually so it's not like they  
20 stopped looking in 2012.

21 A Correct.

22 Q They perhaps haven't done a full Needs  
23 Assessment since that time?

24 A Actually, they've done kind of like two.

1 Q Okay. So they have.

2 A And they've gone back and started over again.

3 Q All right. Okay. It's not quite as dated as  
4 some people might think it is.

5 A Yes. One of the important points is in the  
6 Solutions study, that critical load level that  
7 was defined, the reason the ISO generates that  
8 critical load level is it tells them. If the  
9 critical load level had been 28,000 megawatts,  
10 ISO would have revisited this a long time ago,  
11 and it would have at least been put on hold if  
12 not cancelled, but with the critical load level  
13 of 18,500, that's so far below the 26,000  
14 megawatt peak I think we experienced this last  
15 summer that, you know, they know the Project's  
16 not even close to being something in jeopardy of  
17 being cancelled.

18 Q Okay. One other question that I had, there was  
19 questioning to you earlier today about how long  
20 it would take to fix a cable that became damaged  
21 for whatever reason if the SRP proceeded through  
22 Little Bay, and you had said, you know, maybe  
23 one month, maybe six months depending on the  
24 situation, but I'm presuming that the region

1           isn't going to go dark. That there is other  
2           capabilities; is that correct? That there would  
3           still be electricity to the area even if that  
4           happened?

5       A    Yes. What will happen is this, most of the  
6           needs in this area are the result of two  
7           outages. Either a line being out for  
8           maintenance or some kind of extended repair and  
9           then an additional failure taking place in the  
10          area. So once we're secure for N minus 1 minus  
11          1, that's the terminology. You can go in our  
12          control room now, and, you know, and talk to the  
13          operators in their own language. If we were to  
14          lose the cable, then we would only be able to  
15          withstand a single contingency until we got the  
16          table repaired.

17       Q    So does that mean today we're not able to  
18           withstand --

19       A    That's correct. That's why the needs --

20       Q    And the Gosling Road wouldn't be able to  
21           withstand two contingencies. So that's the  
22           range we're talking about?

23       A    Both packages make the system able to withstand  
24           two contingencies. That's the design criteria.

1 Q I asked Mr. Quinlan if he thought, if we decided  
2 that HDD had to be the process used as opposed  
3 to jet plowing, in that were the order of the  
4 Committee, if he thought that that would be a  
5 cost that ISO would require be captured  
6 regionally versus locally, and I'm going to use  
7 your language, would it be able to be slipped  
8 under the wire, he said that it would be a local  
9 cost, he felt, in his opinion, and I'm wondering  
10 since you have more experience with ISO than  
11 perhaps he does, direct experience, what would  
12 you say to that?

13 A I would agree with that assessment. Just  
14 because it's, for the distances involved, it's  
15 highly unusual.

16 Q And locally, how local is local?

17 A Well, local costs in say, in other situations  
18 where we've had parts of a regional project  
19 localized, what we have done is consulted with  
20 the State Department of Public Utilities about  
21 how to do it. In order for us to do it, we have  
22 to make a filing at FERC, and typically the  
23 people who would object to whatever our filing  
24 was would be the Department of Public Utilities.

1 So we would consult with them first, see if we  
2 could come to an agreement. But in the past, in  
3 Connecticut, it was regional or localized to the  
4 entire state based on an agreement with the  
5 Connecticut Department of Public Utilities. In  
6 a situation in the Boston area a few years back  
7 before our merger, it was localized to all NSTAR  
8 customers in that, in the area.

9 Q All right.

10 A But it is a separate filing that goes to FERC,  
11 requires their approval, and for the most part  
12 if FERC knows the people who would normally be  
13 intervenors agree with what you're doing, at  
14 least our track record has been that then they  
15 would approve it.

16 Q Okay. I now have two questions that relate to  
17 the Gosling alternative that were, one of which  
18 was the subject of questioning today. And it  
19 talked about if that had been the alternative  
20 chosen that there were, I don't know, I can't  
21 remember, maybe 16 or 19 miles of rebuilt  
22 circuit. What does that mean?

23 A It means the existing lines that are there  
24 didn't have enough capacity.

1 Q And are they transmission lines or distribution  
2 lines?

3 A Transmission. I think there were two or  
4 actually three 115,000 volt transmission lines.

5 Q So it would be rebuilding a transmission line  
6 into a stronger or higher capacity?

7 A Higher capacity wire, and generally that would  
8 mean the structures that are there are not  
9 strong enough to support the new heavier wire so  
10 the structures get replaced also. So it's an  
11 end-to-end rebuild of the line.

12 Q And do you have any sense of the height of those  
13 structures today?

14 A I mean, height varies because when you cross  
15 highways you have to go up. But generally  
16 probably in the 75 to 90-foot range, give or  
17 take.

18 Q So they'd be replaced with similar size  
19 structures?

20 A They would probably be replaced with a little  
21 bit taller structures in general.

22 Q Okay.

23 A We tend to use much more steel today than we did  
24 in the past. It just lasts longer, is more

1 resilient to storms, things of that nature.

2 Q The three miles of new line, do you know what  
3 towns that would be through?

4 A That would have been from Dover to Three Rivers  
5 which is in, I believe it's Eliot, Maine.

6 Q Okay. Probably Dover crossing into Maine  
7 directly?

8 A Yes. I believe, well, it would start at Dover  
9 substation, follow the existing 115 line, over  
10 to Three Rivers.

11 Q So if it's following an existing line, why is it  
12 new, why is it new construction?

13 A Well, what it is, it's two lines. The existing  
14 line would be rebuilt, and then the new line  
15 would be built in parallel to it.

16 Q Okay. So somewhat like we have in parts of the  
17 SRP project as well?

18 A Yes.

19 Q Okay. Thank you. How often does Eversource use  
20 jet plowing?

21 A Well, I guess it really depends on when we have  
22 the need to install submarine cables.

23 Q When was the last time?

24 A Well, the last one I'm familiar with, and I

1 would have to check on Connecticut, but we jet  
2 plowed a four and a half mile line from Falmouth  
3 to West Chop on Martha's Vineyard three years  
4 ago, four years ago.

5 Q That's all my questions, Madam Chair. Thank  
6 you.

7 PRESIDING OFFICER WEATHERSBY:

8 Mr. Fitzgerald?

9 **QUESTIONS BY MR. FITZGERALD:**

10 Q Good afternoon.

11 A Good afternoon.

12 Q I have some overarching questions, but a couple  
13 of quick technical ones.

14 There was a question earlier about the cost  
15 and time effort to repair the underwater cable  
16 that's jet plowed. If you were to HDD, how  
17 would that, and there was a failure, how would  
18 that be repaired and what would be the cost and  
19 time?

20 A Okay. If it was HDD, it would be a single  
21 conductor from end to end. So once it was a  
22 failure in there, our only choice would be to  
23 pull the existing conductor out and pull in new  
24 ones, and so we would have to either have a

1 spare that's long enough to cover the complete  
2 distance or we would buy a single piece of cable  
3 to cover the complete distance and pull it in.

4 So lead time on this kind of cable is a  
5 year or so. So it would be out as long as a  
6 year or we would have to expend the extra money  
7 to have a spare piece of cable that would cover  
8 the entire distance available and in storage.

9 Q If you were to have a spare, would you consider  
10 installing that so it would just be a case of  
11 switching?

12 A Well, if we did that, the cost of installing the  
13 extra conduct for the spare, the cost of the  
14 wire for it, would all be a local cost. The ISO  
15 does not regionalize spares.

16 Q Okay. That goes to my next question. When a  
17 cost is localized, how does Eversource allocate  
18 that cost to customers? I heard, and I think  
19 you mentioned the case in Connecticut where  
20 there was an allocation that was made to all  
21 customers in an area versus just the Eversource  
22 customers. How is that allocation made, and is  
23 it ever allocated, you know, for instance, I  
24 think I heard you say smaller, you know, areas

1 where you've gone underground to accommodate  
2 certain intervenors, those may be considered  
3 localized costs? Do they get allocated to the  
4 whole, to the entire rate base in New Hampshire?

5 A Well, that has been the history. Again, we  
6 would consult, I think we would consult with the  
7 Department of Public Utilities and make sure  
8 they had no objection. I don't know if we'd say  
9 they agreed to but had no objection to us doing  
10 it that way.

11 Q So you would, your approach would be to allocate  
12 it to all customers, and then if it were ruled  
13 that that wasn't okay, you'd bring it down to a  
14 smaller, to a smaller group?

15 A Yeah, I don't think, we wouldn't make that  
16 choice all by ourselves to say, you know, it  
17 should go there. We would certainly consult  
18 with the Department and make sure they agreed on  
19 it. But there's no, what has been done in the  
20 past was an allocation to all customers in the  
21 state of Connecticut, and then in a different  
22 case, all customers to what was NSTAR Electric  
23 at the time. So they have been allocated that  
24 way in other cases.

1 Q So it doesn't get allocated down lower than your  
2 company's customer base?

3 A So far it hasn't.

4 Q So the ISO process, as I understand it, as I  
5 believe I heard testified previously, maybe  
6 Mr. Quinlan, is that they identify a need, they  
7 open up and accept proposals from anyone who is  
8 interested, and then if they don't receive  
9 proposals from any interested parties, they look  
10 to the utility that's in that area to come up  
11 with proposals?

12 A Yes. In the Transmission Operating Agreement  
13 with ISO New England and in the transmission  
14 owners or PTOs, Participating Transmission  
15 Owners, have an obligation to build. Once a  
16 Project proceeds to the Regional System Project  
17 List, and it's assigned to one of the  
18 transmission owners, we have an obligation to  
19 proceed forward to build the project.

20 Q So does that happen before it's open to other  
21 companies or is it assigned to you and then  
22 they, then someone else could come in and say  
23 Eversource, we'd like to build that?

24 A No. In the Solutions process, the ISO will do a

1 need study and then discuss that openly in the  
2 Planning Advisory Committee and say here are the  
3 problems we've found. And they'll say we're  
4 going to convene a study group, you know, of  
5 these participants in this area that are  
6 affected by this to come up with solutions.  
7 Anybody who wants to join the study group can  
8 raise their hand and they will be invited in,  
9 and at that point it's also open to the  
10 generation sector.

11 In fact, this New Hampshire/Vermont study  
12 was one of the first ones where the ISO actually  
13 did a study that showed where and how much  
14 generation was needed in different locations to  
15 solve all the problems. It was called a  
16 Nontransmission Alternative Evaluation, and it  
17 was done they request of the generators who were  
18 in the process. It was, again, presented at PAC  
19 and none of the generators wanted to step  
20 forward to propose that they would build any of  
21 the facilities needed to address it.

22 Q So could some other entity than Eversource who  
23 is an operator in this area propose a  
24 transmission-based solution?

1 A Sure. I've got a great example of that. The  
2 Greater Boston solution that MVRP was a part of,  
3 the ISO had a meeting where they proposed the  
4 solutions. And New Hampshire Transmission,  
5 which is a subsidiary of Nextera, stood up and  
6 said we want to propose to build the DC line  
7 from Seabrook to Boston to solve this. And we  
8 went back to square one and had a three-year  
9 delay before the study team again concluded that  
10 a DC link was way, you know, was \$400 million  
11 more expensive. So yes. Anybody who actively  
12 raises their hand and has what the ISO considers  
13 a credible way to solve it, they will address  
14 that.

15 Q So in case of the need that was identified that  
16 resulted in your SRP proposal, was another  
17 alternative proposed at the ISO planning  
18 process?

19 A No. Well, I guess the alternative, say, other  
20 than the ones we've discussed here today?

21 Q Yes.

22 A No.

23 Q Okay. So as I understand it, it was incumbent  
24 on you to propose the solution, on Eversource,

1 not you personally, but for Eversource to  
2 propose the solution because no one else came  
3 forward.

4 A Yes. The study team because nobody came forward  
5 with, I'll call them nontransmission solution,  
6 installing generators or something else to  
7 address the problems, the study team then took a  
8 look at how to create transmission solutions  
9 that would solve the problem. And they  
10 originally had, I think, four options on the  
11 table which got narrowed to two.

12 Q Now, those two options, one of which was Gosling  
13 Road, I think there was a question this morning  
14 about Gosling Road being, so to speak, gold  
15 plated. As I understood Mr., I think it was  
16 Mr. Quinlan's testimony or Mr. Bowes possibly,  
17 that one of the considerations for Gosling Road  
18 was that Eversource and others had been accused,  
19 so to speak, of gold plating projects. That  
20 doesn't mean that this one necessarily was, but  
21 that was a consideration that, you know, taking  
22 the less expensive alternative, you know, dealt  
23 with that criticism, that potential criticism?

24 A Well, when you have two options on the table,

1 one solves your problem and gives you more than  
2 a hundred megawatts of margin. The other one  
3 solves your problem and gives you 400 megawatts  
4 of margin. The 400 megawatt one is more  
5 expensive. How do you justify, you know, taking  
6 it.

7 I'm an ex-operator. I love margin, right?  
8 And our operators love me because I make  
9 statements like that. But the truth is, we live  
10 in a world of limits. The solution that was  
11 there has a reasonable margin on top of it,  
12 especially as we look into the future and most  
13 of the crystal balls say load is going to at  
14 best stay flat. You're paying for something  
15 that -- you know, I was on Martha's Vineyard  
16 this summer, and a guy went by me in a Ferrari  
17 on an island where 40 is the top speed limit.  
18 What's the point?

19 Q Good analogy. So another line of questioning  
20 was relative to this suite of projects, and I  
21 guess I have two areas of question there. One  
22 is it seems to me that it was testified that  
23 these all fit together. But that the ones that  
24 have been done so far independently have benefit

1 in and of themselves, but their ultimate intent  
2 is to be part of this suite. Is that a correct  
3 characterization?

4 A That's correct. Yes.

5 Q So, for instance, you were asked about  
6 improvements in Londonderry, and I guess, is it  
7 safe to say that this is a complicated grid  
8 machine that we're talking about here and that  
9 things that are fixed in one area can have a  
10 benefit and go together with the solution for  
11 another area? So does that?

12 A Yeah. I mean, it's an interconnected network,  
13 and we have, it's an operation constantly 24/7.  
14 So we have varying load situations, varying  
15 generation situations, varying outage, you know,  
16 maintenance kind of situations, constantly, you  
17 know, back and forth.

18 So any improvement to the system, any  
19 strengthening of the system, to my perspective,  
20 always has a benefit, no matter what.

21 Q So but when you look at the solution that was  
22 needed for this, for this need that was  
23 established by ISO, that solution also looks at,  
24 for instance, major interconnections in other

1 places that could be potentially affected. So  
2 it's not just looking at this one piece of it.  
3 There's other pieces to that puzzle?

4 A Yes, to some extent. Most of the issues that we  
5 have here really relate to the strength of the  
6 115 system in the Seacoast area to supply the  
7 Seacoast loads that are within that area. So  
8 the improvements we make here is not going to  
9 change the New Hampshire/Maine import limits and  
10 do anything big on that level. This is really  
11 about security and service to the loads in the  
12 Seacoast area.

13 Q There was some questioning about the cost  
14 implications of the environmental considerations  
15 of going under Great Bay, and I guess it seemed  
16 to me that the implication was made that the  
17 costs of going under Great Bay may have  
18 increased while holding constant the cost of the  
19 other alternative? I mean, I assume that the  
20 cost of the other alternative would potentially  
21 have increased with whatever you encountered  
22 over there, and the complexity of going through  
23 two states and so on, would have, I mean, could  
24 you address how both of them would have evolved?

1 A Yeah. I think the slide that we were looking at  
2 earlier had 2012 costs in it, you know, back  
3 when the ISO was deciding. And certainly we  
4 know more about how the Seacoast Reliability  
5 Project is proposed to be built and designed,  
6 and that gives you us a much better idea on cost  
7 and structure of it.

8 I think in response to an information  
9 request from the Town of Newington a while back  
10 we went in and looked at the costs of the  
11 Gosling Road alternative, and they have gone up,  
12 you know, also, in terms of that and the  
13 projection I believe is 200 to \$210 million.

14 Q Okay.

15 A On that scope of work also.

16 Q Okay. And you could have encountered similar  
17 problems of people along that line wanting it  
18 buried or whatever?

19 A Exactly. The rebuilding of the existing lines  
20 or the construction of the new, of a new line  
21 will certainly make a different group of people  
22 very unhappy.

23 Q So as far as alternatives, even though that one  
24 is off the table pretty much, it still doesn't

1 make sense because its costs have escalated as  
2 well; is that correct?

3 A Yes. We went back and looked and checked.

4 Q Okay. Good. Thanks. That helps.

5 MR. IACOPINO: Can I ask question jumping  
6 off of that?

7 With respect to that Gosling Road  
8 alternative, some of that did require some new  
9 submarine construction; is that correct? The  
10 three-mile new loop? At least that's what's in  
11 that Power Point. Dover Three Rivers 115 kV  
12 line, new three-mile 115 kV overhead submarine  
13 line, and that's from Newington Exhibit 17 that  
14 was on the screen for you before.

15 A I'd have to -- I don't think there's any -- I  
16 don't believe there's submarine. We can check.

17 MS. DUPREY: On, Madam Chair, just on that  
18 same point, I was just reading on Mr. Jiottis's  
19 testimony, his Prefiled Testimony, on page 7.  
20 It says that there would have to be two  
21 Piscataqua River crossings. Would that possibly  
22 be what would --

23 A They would be river crossings, but I believe the  
24 existing crossings are overhead so I would

1 expect the additional line to be overhead.

2 MR. IACOPINO: Thank you. Sorry.

3 **QUESTIONS BY MR. FITZGERALD:**

4 Q So jet plowing versus HDD. When you testified  
5 this morning you seemed to indicate that jet  
6 plowing was sort of the conventional technology  
7 in 2012 at the time, that HDD didn't make sense  
8 at all because of the distance, it may have,  
9 that may have changed since then, but is it, of  
10 the environmental considerations and the  
11 environmental mitigations and the issues that  
12 are presented here in Great Bay, and maybe this  
13 is not a question for you but I think it would  
14 have been considered at the time, have those  
15 changed so dramatically that dealing with the  
16 environmental issues associated with jet plowing  
17 is significantly different than you would have  
18 considered it to be in 2012?

19 A I'm probably not the right person to ask that  
20 because I'm not intimately involved in that.  
21 But I can tell you the other, you know, the  
22 cable to Martha's Vineyard we HDD out from the  
23 shore to get under eelgrass beds and  
24 environmentally sensitive areas and jet plow the

1 four miles across and then do the same on the  
2 other side. So for the most part, there are  
3 ways to deal with it. You know, there are  
4 concerns and sensitivities that we have to  
5 address, but usually there's a way to figure out  
6 how to do it.

7 Q So would you say that jet plowing today is still  
8 sort of the standard but that HDD is applied in  
9 specialized locations that may seem to need it  
10 for some reason?

11 A Yes. I'd say, we had a cable replacement  
12 project in the Acushnet River in New Bedford and  
13 we had to HDD because it was a Superfund site  
14 under the river. So that, in that particular  
15 case we were trying to get cables out so they  
16 could be removed as part of the cleanup and so  
17 the only solution then was HDD, and that was  
18 what was done.

19 Q So the number of projects done to date and the  
20 amounts spent and so on, there was some  
21 questions today about how that impacted  
22 reliability, but as I understand it, and you  
23 correct me if I'm wrong, was that you're doing  
24 more of a failure analysis? It's not like

1 something's 37 percent reliable and then it's 52  
2 percent reliable afterwards. You're, as I  
3 understand it you're doing, you're saying it's  
4 either zero or a hundred.

5 A Yeah, to a certain extent, that's right. You  
6 know, we look at the system in a mathematical  
7 model of load flow, and we say okay, this line  
8 is out of service and this breaker fails. What  
9 happens. Are we safe, are we secure.

10 Q So you're doing more.

11 A We go through a multiple combination of hundreds  
12 of contingencies to show that the system can  
13 withstand all of that.

14 Q But you're doing more of a failure analysis; is  
15 that correct?

16 A You could call it that.

17 Q Potential failure.

18 A You could call it that.

19 Q Okay. And I believe you were asked this morning  
20 if there had been any outages. I assume that  
21 the intent of the ISO process is to get things  
22 built before outages occur; is that safe to say?

23 A That's --

24 Q So if there had been outages that had occurred

1 in this area, that would be a sign of that  
2 process had not --

3 A Yes. In fact, that's the intent of the NERC  
4 Reliability standards because they were spawned  
5 from the 2003 blackouts where if these kind of  
6 measures had been taken before the blackout, the  
7 blackout wouldn't have happened. So that's the  
8 root of why we have the Reliability standards  
9 that we have.

10 Q Does the New Hampshire PUC participate in the  
11 ISO approval process?

12 A There have been representatives at both the PAC  
13 and the Reliability. I don't know that they're  
14 there every single meeting but yes.

15 Q Well, do they have any charge to represent New  
16 Hampshire's interests at ISO since these are  
17 decisions that are being made that would affect  
18 New Hampshire's --

19 A Well, I think they would do. They've given  
20 various presentations on costs and things of  
21 that and what the path going forward should be.

22 Q Okay. Have they ever raised questions with  
23 regards to the alternatives chosen?

24 A In this case? Not that I'm aware of, No.

1 Q You also testified about NERC and NPCC standards  
2 and so on, but as I understood it, the ISO  
3 approval process, as I think you indicated,  
4 considers all of those standards and says you  
5 have to meet them all, and they're all  
6 incorporated into this process?

7 A Yes.

8 Q Okay. The comparison chart we looked at in  
9 Newington Exhibit 17, is that something you  
10 presented to ISO or is that something that you  
11 developed based on the ISO decision and said  
12 this is how ISO saw it?

13 A That was something that the study team which is  
14 led by ISO employees put together, and so there  
15 was input.

16 Q Okay. That document was marked, I believe with  
17 Eversource or PSNH on it? I'm not sure.  
18 Northeast Utility Systems? But it was a, that  
19 chart was a product of the team?

20 A Yes.

21 Q Not just Eversource or its predecessors?

22 A Correct.

23 Q So the evaluations made there, the checkmarks,  
24 the grades and et cetera, et cetera, et cetera,

1           were not your evaluations given to ISO. It was,  
2           that was what the ISO process resulted in?

3       A     It's kind of a consensus because if, say, one of  
4           the options was voltage control. If I was  
5           trying to sway it in a particular direction, I'd  
6           say one is better than the other, and other  
7           people on the team would say timeout, you know,  
8           what are you talking about. So there's  
9           consensus.

10       Q     How is that team selected?

11       A     Well, the ISO sets up the study team, calls or  
12           emails the appropriate people at the different  
13           entities, and basically says who are you  
14           assigning to the team. Say, in my previous  
15           role, for Greater Boston I would have gotten  
16           that, and I would send the reply back with a  
17           person's name, you know, and say she's our  
18           representative and so-and-so's the backup. You  
19           know.

20       Q     So ISO identifies responsibility entities to be  
21           part of the team, and then whoever those  
22           entities are put forward someone?

23       A     Yes, and the team can reach out, and if they had  
24           some particularly unique situation and they

1 wanted somebody's expertise that they knew this  
2 person knew a lot about a particular subject,  
3 they'd reach out and pull them in.

4 Q I guess what I'm getting at is is the result of  
5 the ISO process from this team, I assume it's an  
6 ISO document or it's an ISO decision, but it's  
7 not all based on input solely from Eversource.  
8 It's based on input from other potential  
9 experts?

10 A Sure.

11 Q Who would look and say no, this doesn't make  
12 sense or the environmental costs are going to be  
13 double what you think they are or something. So  
14 there's more than just your company's  
15 involvement in that process?

16 A Yes. Typically, it would be in this area of  
17 Central Maine, Aramie, is that what the name is  
18 now? Central Maine Power would have a  
19 representative because they're a bordering  
20 system. National Grid would have a  
21 representative because they're a bordering  
22 system to the south. We would be on there. ISO  
23 would have people on there. New Hampshire  
24 Transmission could have been on there if they

1 wanted to, you know, at the time and anybody  
2 else.

3 We've had cases where contractors, there's  
4 a company called Power Engineers that wanted one  
5 of their people on the job with the hopes that  
6 this would get them an inside track to a  
7 contract at some point in time.

8 Q And this is my last question, mercifully. The  
9 team presents a proposed solution to ISO New  
10 England. Does ISO New England take that and  
11 independently review it themselves and say yes,  
12 we accept this, we accept the assumptions, we  
13 accept the -- I mean, do they have their own  
14 staff that looks at it?

15 A Yes, an ISO engineer is leading the study team.

16 Q Okay.

17 A And then they'll report to an area manager, to a  
18 Director, and before any of these Power Points  
19 you've seen are actually presented publicly,  
20 it's gone up through generally Steve Rourke, the  
21 Vice President of System Planning.

22 Q So this result of this process is basically this  
23 is an ISO proposed project that has been  
24 verified and evaluated by ISO New England.

1 A Yes. The end product is an ISO product that  
2 they endorse.

3 Q Thank you very much.

4 PRESIDING OFFICER WEATHERSBY: Director  
5 Muzzey?

6 DIR. MUZZEY: Thank you.

7 **QUESTIONS BY DIRECTOR MUZZEY:**

8 Q To continue with the discussion of the ISO  
9 planning process, is it the Planning Advisory  
10 Committee who decides when a new needs study is  
11 done or an amendment to a study is done?

12 A Well, no. ISO kicks off a study. In fact, we  
13 just received a letter from ISO New England, I  
14 think it was last Friday, saying they were  
15 kicking off a new needs analysis study for the  
16 Greater Boston area.

17 Q Did that include the Seacoast then?

18 A No. The Seacoast, there is actually an ongoing,  
19 a revised needs analysis that is very close to  
20 being done and will probably be presented before  
21 the end of the year. That's the 2027 needs  
22 analysis.

23 Q So the last time that level of study was done  
24 was for the 2010 report?

1 A Yes. 2012 was when a Solutions study was done.  
2 There was a needs analysis done at 2023, and  
3 they actually, they didn't present. They had a  
4 draft that was around for comments. And then  
5 they decided that loads in the forecasting had  
6 changed enough that they were going to go back  
7 and start over, and that's where the 2027 study  
8 that's in process right now is coming from.

9 But I should put out as a proviso, the 2023  
10 and the 2027 studies all assume that Seacoast  
11 has been built because it has an I.3.9 approval.  
12 When they do studies, they look at the I.3.9s  
13 that are approved and that becomes the starting  
14 point.

15 Q Right. So do you have some sense or does ISO  
16 make it public as to what triggers a new study?

17 A Well, let's say in the instance of the Greater  
18 Boston letter that came out, Exelon's proposal  
19 to retire the Mystic generating stations in  
20 downtown Boston was a major driver of that. The  
21 other thing that they have is the NERC  
22 Reliability Standard TPL-001, while it requires  
23 an annual assessment of the system, it doesn't  
24 require annual studies. Your assessment can be

1 based on studies that have been previously  
2 finished within a five-year window. So  
3 functionally, what NERC is saying is you need to  
4 redo a study every five years, no matter what,  
5 and you can look at your studies every year and  
6 say yeah, this is all good. I'm okay. But a  
7 study should be redone in basically a five-year  
8 window. And the Greater Boston study that was  
9 done was based on the 2013 loads so that would  
10 expire in 2018 hence.

11 Q Right. In the various questions and  
12 testimonies, what I'm hearing from people in the  
13 Seacoast is that their hope is that a new study  
14 will be done, and it will become clear for  
15 various reasons that Seacoast Reliability may  
16 not be needed anymore. If ISO is doing new  
17 studies, assuming Seacoast has been built, is  
18 that scenario ever possible with ISO?

19 A It's not possible and that expectation is not  
20 realistic because the problems that Seacoast is  
21 designed to address occur at load levels that  
22 occurred yesterday. So if we were to go back  
23 and do a study the way they would like it to be  
24 seen, the need for Seacoast would still be

1           there.

2           Q     Right. Looking at -- changing gears a little  
3           bit.

4                     Looking at the Gosling Road alternative and  
5           then the Seacoast one, it seems like from at  
6           least a geographic standpoint the Gosling Road  
7           improvements, the suite of improvements are more  
8           geographically focused on the Seacoast whereas  
9           the improvements for the Seacoast Reliability  
10          suite extend further west with some areas as far  
11          west as Chester and Deerfield and those  
12          locations.

13                    Is there, can you provide an explanation as  
14          to why that seems to be the case?

15          A     Okay. Well, I think, I tried to do a little bit  
16          of that earlier, but the Seacoast suite of  
17          problems, what they do is reinforce the existing  
18          115 structure that starts at Deerfield, looks  
19          over to the coast and then loops back to Scobie  
20          Pond in Londonderry, and it reinforces that  
21          whole loop in a way that it can withstand all  
22          the different contingency sets and still supply  
23          all the load in those conditions.

24                    The Gosling Road alternative, what it did

1 was instead brought another source into the area  
2 and put that source basically right near the  
3 Newington generating facilities because the 345  
4 and 115 facilities are not very far apart in  
5 that area. Then with that new source, you now  
6 have a new source of power that flows in a  
7 different direction. Some flows towards  
8 Londonderry. Some flows towards Deerfield. You  
9 then have to reinforce the 115 system to be able  
10 to take those new flows created by the new  
11 Gosling Road transformers.

12 So they're at a high level very different  
13 ways to solve the problems in the area and  
14 that's why you get Projects that are in  
15 different parts of the area.

16 Q And it was the study team that came out of the  
17 Planning Advisory Committee that suggested both  
18 the Gosling alternative and the Seacoast  
19 alternative?

20 A Yes, and I think they had two more alternatives  
21 that they were first looking at.

22 Q And then the Alternative 1 and Alternative 2  
23 received additional study?

24 A Yes.

1 Q And who would have done those studies?

2 A The study team.

3 Q Study team continues with that.

4 A That's right.

5 Q And then thinking of this question of regional  
6 cost versus localized cost. You had mentioned  
7 that if a type of construction is triggered or  
8 caused by local or state regulations or laws,  
9 that may be a localized cost.

10 A Yes. The ISO's procedure kind of calls that  
11 out.

12 Q Right. What about a federal regulation or law  
13 such as, you know, an Army Corps permit or the  
14 National Historic Preservation Act. How does  
15 ISO look at those?

16 A I think that would be complying with the law.  
17 So that would be the case we would make is that  
18 in order to do this, we have to comply with  
19 permit requirements or the law, then that's a  
20 regional cost. They're not asking us to build  
21 something and break the law in the process.

22 Q Right. But yet what about local and state  
23 regulations and law. You wouldn't want to break  
24 those either and couldn't, in effect, could you?

1 A No, but I think what the ISO looks at, and the  
2 example they give is the Connecticut one where  
3 locally people that didn't want to look at  
4 overhead structures passed a law that said put  
5 them underground, and the ISO said well, the  
6 rest of the customers in New England shouldn't  
7 have to pay that. So there's room in there in  
8 terms of what's going on.

9 Q So in the Connecticut example, was that local  
10 law passed after the project was announced or --

11 A Yes. I think it was done as part of siting  
12 proceedings.

13 Q So I'm just, I'm just wondering if there are  
14 what we could call pre-existing local laws or  
15 state regulations and laws, you know, in place  
16 long before a project is announced?

17 A I haven't, I haven't been involved personally  
18 with any instances of that when TCAs have been  
19 coming in, and I don't know how they would take  
20 that. It's their decision, and not that they're  
21 arbitrary about it, I think they're just trying  
22 to make sure costs stay contained.

23 Q Okay. Thank you very much. That's all I have.

24 PRESIDING OFFICER WEATHERSBY: Mr. Way?

1       **QUESTIONS BY DIRECTOR WAY:**

2       Q     Good afternoon.

3       A     Good afternoon.

4       Q     I have a few questions on an exhibit.  Newington  
5       Exhibit 6.  And I don't know if that's something  
6       we can get on the big screen if we need to?

7               MR. NEEDLEMAN:  I think we can try to do  
8       that.

9       Q     That would be great.  Dawn, is that possible?

10              MS. GAGNON:  Of course it is.

11       Q     Madam Chair, may I ask the attorney in Newington  
12       for some clarification on the exhibit source?

13              MR. IACOPINO:  Sure.

14              PRESIDING OFFICER WEATHERSBY:  Sure.

15       Q     Attorney Geiger?

16              MS. GEIGER:  Yes.

17       Q     I'm looking at my notes and I'm finding them  
18       incomplete on this, and I found this to be  
19       interesting.  What is the source of this  
20       exhibit?  This is the, so everyone knows what  
21       this is, this is the compound annual growth rate  
22       projections.

23              MS. GEIGER:  The source of this exhibit was  
24       an attachment to a response to a Newington Data

1 Request propounded on the Applicant, and I  
2 believe it was Data Request 1-12.

3 Now, the problem when I marked the  
4 Responses to Data Requests was I only marked  
5 those responses that were actually provided via  
6 email and for which I had a hard copy. There  
7 were attachments provided on a disk that I did  
8 not print out and attach, and subsequent to the  
9 filing of the initial Exhibit I went back and  
10 discovered that there was this CD that I had not  
11 previously printed out hard copies of, and so  
12 that's why I needed to introduce this exhibit.  
13 I know that's a long explanation. Basically  
14 it's a response to a Data Request.

15 Q That's fine. That came from Eversource.

16 MS. GEIGER: Yes.

17 Q And Mr. Andrew, you mentioned that you weren't,  
18 this does not come from you. You were somewhat  
19 familiar with the numbers or how they were  
20 generated.

21 A Right. Correct.

22 Q And I'm just wondering -- and I just had a few  
23 questions. That looks much better. Thank you.

24 These numbers are used to show that there

1 is going to be a need going forward over the  
2 next ten years. Was this the only source for  
3 the annual growth rate that's been submitted  
4 today?

5 A Well, I think this is the Eversource projection  
6 for, well, it's labeled here Eastern Region, but  
7 I think what we've been calling the Seacoast  
8 region for our loads in the area. This is not  
9 Unitil's loads in the area. Or the Central  
10 Maine Power substation at Bolt Hill is fed from  
11 the 115 system in the Seacoast area also. So  
12 that's kind of the complete load picture. This  
13 is strictly the Eversource one, and it's the  
14 forecast based on the 90/10 summer, there's only  
15 a 10 percent of exceeding these, the  
16 temperature, the weather parameters that create  
17 these loads going forward. So the source of it  
18 is our internal load forecast, and I think this  
19 would have been probably the 2016 load forecast,  
20 looking at this, that this came from at the  
21 time.

22 Q All right. So you anticipated my next question  
23 on the 90/10. In terms of when this was  
24 generated, it starts obviously at the 2016, but

1           what point does this begin, is this generated  
2           right at 2016 going forward? Is it '14 or '15?

3           A    Yes. We have an annual load forecast that takes  
4           place, and we typically get that in January or  
5           so where we take a look at the previous year's  
6           loads that came in, the weather that was there.  
7           We take a look at the economic forecast going  
8           forward, and we have a load forecasting group  
9           that puts together a demand forecast for the  
10          next ten years going out.

11          Q    So there is the ability to put that economic  
12          demand forecast in there, into that algorithm?

13          A    Yes. The economics are included in there. Now,  
14          one of the things I should point out. This is  
15          our load forecast data.

16          Q    Right.

17          A    The studies we've been referring to, if ISO does  
18          a regional study, it's based on their load  
19          forecast. All right? And the differences are  
20          subtle. They take our load forecast and use it  
21          kind of on a percentage basis to allocate their  
22          load forecast to our substations. I probably  
23          made the situation worse.

24          Q    No. Thank you.

1       **QUESTIONS BY MR. FITZGERALD:**

2       Q     A question was asked this morning about the  
3             difference between 2017, 2018, that significant  
4             jump?

5       A     Yes.

6       Q     Is that, are the numbers prior to 2018 actuals  
7             or are they what the forecast was back then? So  
8             is that jump the difference between actual and  
9             then going to a forecast or --

10      A     It might be. Off the top of my head, I can't  
11             explain why that one jumps like that.

12      **QUESTIONS BY DIR. WAY:**

13      Q     And that was my question too. This is very much  
14             a linear projection.

15      A     Right. And you can see the percentages are  
16             given right above which is going forward.

17      Q     And this is being used for the compound annual  
18             growth rate for the Project.

19      A     Right.

20      Q     So I'm just --

21      A     Right. I think an important point is to note  
22             that all of these Projects are not based on load  
23             forecasts going forward. They're are problems  
24             that are there today, that have been there for a

1 number of years. So that it isn't a matter that  
2 if our load forecast is aggressive or incorrect  
3 we'd be building to solve the problem that  
4 wouldn't exist. The problem is there.

5 MR. FITZGERALD: Another one, Madam Chair?

6 PRESIDING OFFICER WEATHERSBY: Yes.

7 MR. FITZGERALD: So could we get a response  
8 on this in terms of when this document was  
9 actually produced and whether those numbers in  
10 the 2016/2017 are actuals or if they are  
11 forecast numbers that were forecast back then?

12 A Sure.

13 DIR. MUZZEY: I would find an explanation  
14 helpful for the 2015 versus the 2016 numbers as  
15 well.

16 **QUESTIONS BY DIR. WAY:**

17 Q The next piece, these load forecasts,  
18 historically, how accurate are they in your  
19 experience?

20 A They're as accurate as predicting the weather is  
21 because you're looking ahead at a 90/10 weather  
22 event, and that is determined by a three-day  
23 weighted temperature humidity index. So it's  
24 basically, the assumption is you're getting one

1 of the three-day heat waves that just build in.  
2 Right? And on that last day we're all cooking  
3 and we've all had it and we're hoping for  
4 thunderstorms. So that's the problem.

5 And the other problem is when you look back  
6 at historical loads, what you also need to know  
7 is what the weather was in those years because I  
8 believe last year we did not get to the 50/50  
9 load level. The weather wasn't severe enough to  
10 go beyond that forecast.

11 So you have to take it with a grain of salt  
12 when you're looking at actuals versus forecast.  
13 Our current kind of load forecasting method  
14 would be a table similar to this with actuals  
15 above a line, and then there's typically a big  
16 jump and then it goes forward at a much smoother  
17 path and the big jump is the difference in the  
18 weather assumptions from the year that you  
19 actually had to the 90/10 forecast you're  
20 projecting and trying to make sure you're able  
21 to serve customers under.

22 Q And what you said earlier, though, this is not a  
23 big determinant in this project, whether a  
24 Reliability Project is needed, you're saying

1 that it's really what has happened historically.

2 A Yes, in this case. There have been other cases  
3 where projects were based on meeting a load  
4 forecast, right? In this case that's not the  
5 case at all. At 18,500 megawatts of load that  
6 we hit very consistently, the problems begin to  
7 occur in the area. So the problem's there  
8 today.

9 Q Thank you.

10 PRESIDING OFFICER WEATHERSBY: Mr. Shulock?

11 **QUESTIONS BY MR. SHULOCK:**

12 Q Good afternoon. When your company follows this  
13 process and constructs a transmission facility,  
14 is your cost recovery and rates guaranteed?

15 A I don't know that "guaranteed" is the term. I  
16 think we're subject to prudence reviews all the  
17 time.

18 Q Where does that occur?

19 A It occurs at the ISO level for one point. It  
20 can occur by any intervenor requesting that of  
21 FERC, and I believe there is a new process  
22 that's in place for a lot of regulators to be  
23 able to do that. I think that in that process I  
24 think is response, in response maybe to some of

1 the concerns you have.

2 Q So if you go through this process and ISO  
3 selects a Reliability solution as it did here?

4 A Yes.

5 Q Does that weigh favorably on your prudence  
6 review?

7 A Well, no, because prudence is did we do it in a  
8 prudent manner. You know, the fact that we now  
9 have been chartered with going forth and doing  
10 it, now we still have a responsibility to do it  
11 well, not waste money and --

12 Q But in that prudence review, you're not  
13 challenged for having constructed the preferred  
14 alternative.

15 A That's correct. Correct.

16 Q Now, you said that once the Project was selected  
17 and it was put on the list that you were  
18 obligated to proceed --

19 A Yes.

20 Q -- to try and construct it?

21 A Yes.

22 Q Could you at that point have chosen to construct  
23 the Gosling Road project instead?

24 A No.

1 Q I guess I can cross off five questions.

2 A That was a good answer then.

3 Q Good answer. So does the cost recovery and  
4 rates for the \$50 million of investment in the 7  
5 projects that have already been completed depend  
6 upon the completion of these last three  
7 projects?

8 A I don't believe so.

9 Q Okay. Does the regionalization of the cost of  
10 those facilities depend upon the approval of  
11 these last three projects or the construction of  
12 them?

13 A I guess that's kind of up to the ISO in terms of  
14 that. Because usually we put a TCA together for  
15 a package of projects that have been proposed  
16 and say that's what we're doing today. I  
17 believe in this case we put some TCAs in before  
18 they adopted that rule. So I would have to  
19 check exactly.

20 Q All right. Thank you.

21 PRESIDING OFFICER WEATHERSBY: Mr. Schmidt.

22 **QUESTIONS BY MR. SCHMIDT:**

23 Q I just have a few questions this afternoon. The  
24 Planning Advisory Committee, who composes that

1 Committee? Can you explain? Is that all ISO  
2 people or is that the team that we're alluding  
3 to earlier?

4 A The PAC is a Committee that's led by the ISO.  
5 The Chair is an ISO employee, and the Secretary,  
6 you know, is an ISO employee. It's open to the  
7 public, to anybody who wants to be included.  
8 You simply have to go on the ISO website, find  
9 the right contacts and say please include me.

10 Then the agendas are sent to you, the  
11 presentations are sent to you, the meeting  
12 locations are sent, and there are  
13 representatives of regulatory bodies, generating  
14 companies, the utilities, the traditional  
15 utilities. There are consultants from energy  
16 efficiency companies, people who represent wind.  
17 Some of the engineering consultants have people  
18 there. There's been a FERC representative  
19 there. Conservation Law Foundation is typically  
20 there, they are members. So it's open to  
21 anybody who wants to participate.

22 Q Very quickly, going back towards the Gosling  
23 Road, I just want to get my hands around it.  
24 The \$50 million worth of work that's already

1           been completed, would that be complementary to  
2           the Gosling Road Autotransformer or is that --

3       A     It would not address any of the issues that  
4           adding the Gosling Road transformers created.

5       Q     And of the 18-mile rebuild that's part of the  
6           Gosling Road, are there any new right-of-ways  
7           required for that?

8       A     I don't believe so. I think that's really  
9           reinforcing, rebuilding existing facilities.  
10          Even the new line would be in an existing  
11          right-of-way.

12      Q     Okay. Now, I want to just make sure I was clear  
13          on this. On the Martha's Vineyard project you  
14          had a portion that was jet plowed? But on the  
15          approaches to each end of that was HDD,  
16          horizontal directional?

17      A     It was HDD from land out a thousand feet, 1500  
18          feet roughly to get under the eelgrass beds.  
19          And then was jet plowed the rest, approximately  
20          four miles the rest of the way.

21      Q     Thank you very much. That's all I have, Madam  
22          Chair.

23                 MS. DUPREY: Can I expand on one of the  
24          last questions?

1 PRESIDING OFFICER WEATHERSBY: You may.

2 MS. DUPREY: Perhaps I didn't hear it  
3 correctly.

4 **QUESTIONS BY MS. DUPREY:**

5 Q Did you say there were no new easements required  
6 for the Gosling Road path?

7 A There was no new right-of-way required. Now  
8 that I think about it, I'm not sure, especially  
9 with our generation divestiture that's just  
10 taken place about the actual site itself for the  
11 substation.

12 Q I'm just looking at testimony from Mr. Jiottis  
13 on page 7, and I'm reading from that. It says  
14 in addition the northern route, which I believe  
15 is this route, would have been complicated by  
16 the need to acquire new easements and additional  
17 land rights in the state of Maine. This is the  
18 northern route or maybe I'm confusing two  
19 things.

20 MR. NEEDLEMAN: I think I can help. I  
21 think what Mr. Jiottis was referring to is one  
22 of the alternatives to the SRP project.

23 MS. DUPREY: And that's not the Gosling  
24 Road?

1 MR. NEEDLEMAN: Correct.

2 MS. DUPREY: Thank you.

3 PRESIDING OFFICER WEATHERSBY: Actually, if  
4 I can just follow up on that, my question, too,  
5 the chart that we had up that you said was a  
6 team of folks working with ISO that listed the  
7 check boxes and the comparisons of the two, it  
8 did say that three miles of new right-of-way  
9 would be required, and I'm wondering if that's  
10 true and if it's just additional width perhaps  
11 along the existing right-of-way? You need a  
12 wider easement or -- I just had a question of  
13 whether or not three miles of new right-of-way  
14 was needed or not.

15 A I think the title was new circuit miles. It  
16 wasn't new right-of-way. Because right next to  
17 it is a heading that says new right-of-ways.

18 MR. SCHMIDT: So just for clarification,  
19 except for the possibility of the easement of  
20 the siting of the transformer, there's no new  
21 land required, properties required for the  
22 Gosling Road alternative?

23 A I believe that's correct. And that comparison  
24 matrix, it has one heading that says existing

1 rights-of-way, yes, yes. Within existing  
2 property, yes, yes. New rights-of-way, no, no.  
3 And then new circuit miles, 3 and 19. So I  
4 think all of the new circuit miles are within  
5 existing rights-of-way. Does that help.

6 **QUESTIONS BY PRESIDING OFFICER WEATHERSBY:**

7 Q I'm going to follow up then with a couple of  
8 questions about the Autotransformer.

9 Now that we know that there's no new  
10 rights-of-way that need to be acquired, there  
11 would need to be new lines and they would need  
12 to cross, as I understand it, they would need to  
13 cross the Piscataqua River, both east to west,  
14 and then back again, west to east? There would  
15 be two river crossings?

16 A Yes.

17 Q And would those use the existing towers there  
18 which are lattice towers or would there need to  
19 be a second set of towers?

20 A There would be a second set of towers.

21 Q There would be approximately the same height?

22 A Presumably. I haven't seen the details of a  
23 design, but they would at least be that.

24 Q Pretty tall.

1 A They would at least be that tall. I would think  
2 is the river a navigable water way?

3 Q Most definitely.

4 A At that point?

5 Q Yes.

6 A So we have to stay, I'm familiar with the Cape  
7 Cod Canal, and we have to stay 165 feet above  
8 mean water level under the Coast Guard permit.  
9 So I would assume there's a similar permit in  
10 existence for those structures. So we would  
11 need to be at least as tall as those ones are.

12 Q Do you know if there was any analysis done of  
13 HDD drilling across or jet plowing across the  
14 Piscataqua?

15 A I don't know that level of detail. I think the  
16 assumption would have been we would have matched  
17 the construction that was right there.

18 Q Put another set of towers next to those?

19 A Yes.

20 Q And if that was the alternative that ended up  
21 getting built, would you also need to go to the  
22 Maine siting board since you're going into Eliot  
23 down and back across?

24 A I'm not familiar with Maine's rules, but we

1 would certainly endeavor to comply with  
2 everything that was there. So --

3 Q My last question, I think there's some followup  
4 questions down there, I just want to probe a  
5 little deeper on if for some reason, this is  
6 totally hypothetical, this Committee were to  
7 deny this Application, what would happen from a  
8 systems point of view. I think you had  
9 mentioned that depending on the reason, you  
10 might look at different routes. Am I correct in  
11 that if this were denied, the Autotransformer on  
12 Gosling Road would not necessarily be the backup  
13 plan?

14 A I think that's fair because, again, we would  
15 look at the lowest cost way or the way to  
16 proceed going forward. And the Gosling Road  
17 alternative and all its associated upgrades, the  
18 last estimate that I saw, I think we prepared it  
19 for the town of Newington's Data Request, is  
20 about \$210 million. So we would be tasked with  
21 saying can we find another way to do this that's  
22 less than \$210 million.

23 Q Would that alternative likely be upgrading the  
24 existing northern route or southern route

1 around?

2 A We'd certainly have to go back and look at all  
3 of those, yes.

4 Q Do you know if any analysis has been done about  
5 that and about the -- it's a tricky spot. To  
6 get to Madbury to Portsmouth you have to cross  
7 one, at least one of 7 or 8 rivers.

8 A Right.

9 Q Or bays.

10 A The old expression "you can't get there from  
11 here."

12 Q So do you know if an analysis has been done  
13 about the cost effectiveness of going north  
14 versus south versus --

15 A No, I don't. That would have been done as part  
16 of the route analysis which I think Mr. Bowes  
17 would probably have been --

18 Q Thank you. I don't have anything else.

19 PRESIDING OFFICER WEATHERSBY:

20 Mr. Fitzgerald, any followup?

21 **QUESTIONS BY MR. FITZGERALD:**

22 Q Sorry I lied when I said I was done, but I don't  
23 think I was under oath. So following up on that  
24 Gosling Road alternative, the portion of that

1 project that was in the state of Maine, is that  
2 in your service territory? Would that still be  
3 your project?

4 A Back in the day it was. Back in 1980, I think  
5 PSNH served Kittery and York and I think even  
6 part of Eliot, but it was, it would be our  
7 Project, we own the facilities. I guess we own  
8 the right-of-way. So we would still build the  
9 transmission infrastructure. We own the  
10 transmission infrastructure that serves CMP's  
11 Bolt Hill substation. So yes. The line would  
12 still be our Project, yes.

13 Q So would CMP have any involvement or is it  
14 possible they would oppose it or anything like  
15 that?

16 A There's no reason I could see that they would.  
17 It's not like we would be trying to serve their  
18 retail customers in that area. It wouldn't be a  
19 franchise question. From that point of view.

20 Q Okay. I'm looking at the ISO website, and I see  
21 that they state their purpose as to ensure the  
22 constant availability of competitively priced  
23 wholesale electricity. So that sort of implies  
24 a balance between availability and price

1           competitiveness?

2       A     Um-hum.

3       Q     Is there anything that you know now that would  
4           cause you to go back and say this is not the  
5           appropriate solution because something has  
6           changed dramatically and that if that ISO  
7           process were to be conducted today that it would  
8           result in a different outcome?

9       A     No. I believe it would come out with the same  
10          outcome.

11      Q     Okay. And if it did for some reason, it would  
12          still be incumbent upon you to, Eversource, to  
13          provide whatever solution is necessary.

14      A     Yes.

15      Q     Are you aware of any case where a major project  
16          like this, of this magnitude, has been proposed  
17          and then over a ten-year or more period has then  
18          be withdrawn or found not appropriate?

19      A     In New England, no. Certainly if you go back a  
20          few years the load forecasts were much higher.  
21          And so we had a lot of different projects  
22          proposed to address this load that in the end  
23          didn't appear so the projects have disappeared  
24          along with the load projections. But ones that,

1           you know, the need is now, in terms of the  
2           system performance and providing that, no. I'm  
3           not aware of any.

4       Q     Thank you.

5                   PRESIDING OFFICER WEATHERSBY:   Okay. Any  
6           redirect, Attorney Needleman?

7                   MR. NEEDLEMAN:   Yes.

8                                   **REDIRECT EXAMINATION**

9       **BY ATTORNEY NEEDLEMAN:**

10      Q     I just had a couple of questions at this point.

11                   So Mr. Andrew, earlier today when Mr. Patch  
12           was questioning you, at one point he observed  
13           that the Seacoast project in somebody's words,  
14           if it was the "linchpin" of all the Seacoast  
15           suite of projects, why spend money on other  
16           projects first until you knew the outcome of  
17           this one, and you said we have an obligation to  
18           proceed. I wanted you to expand on that if you  
19           could.

20                   Can you explain exactly where that  
21           obligation to proceed comes from with respect to  
22           the other portions of the Seacoast suite of  
23           projects that have already been constructed?

24      A     Sure. Well, actually written into the ISO New

1 England Tariff and into the Transmission  
2 Operating Agreement, our section's entitled  
3 Obligation to Build, and Participating  
4 Transmission Owners have an obligation to build  
5 the projects that are assigned to them in the  
6 Regional System Plan which is that Project List  
7 that we've examined a number of times.

8 So we're obligated to move forward on each  
9 of the Projects that are listed in there, and if  
10 for any reason we're unable to do that, then we  
11 have to write a report to the ISO informing them  
12 of that, and then they evaluate if they need to  
13 send a report to FERC, and that's as far as the  
14 Tariff and the Obligation to Build go. The  
15 wording that's there.

16 Q And then just one other question.

17 Earlier today Mr. Fitch asked if you were  
18 aware of or could recall any Eversource projects  
19 where a new transmission line had been built in  
20 a distribution-only corridor, and at the time  
21 you couldn't. Did you go back and look at this  
22 issue over lunch?

23 A Yes, I did, and with some help of some other  
24 memories jogging mine. In the Rochester area,

1           about five years ago, we built the Tasker Farm  
2           Substation that I'll call northern Rochester,  
3           and the 115 line was built from Rochester  
4           Substation or Eastport Substation as it's called  
5           today up that right-of-way to Tasker Farm that  
6           previously had only had 34 and a half kV  
7           distribution lines in it.

8           Previous to that, we had another, back  
9           around 2010, project to build some lines from  
10          Huse Road just south of the Mall of New  
11          Hampshire to Bedford, and then from Bedford  
12          Substation on to North Merrimack which was a  
13          similar situation where 115 lines were built in  
14          rights-of-way that previously only held 34 and a  
15          half kV distribution.

16        Q    Do you have any recollection also of a line that  
17              was designated Y138?

18        A    Sure. Saco Valley, the White Lake, up there  
19              it's a similar situation that was back probably  
20              in the early to mid '90s, where, again, 34 and a  
21              half kV was replaced or upgraded, whatever you  
22              want to call it, to 115,000 volts.

23        Q    Okay. Thank you. Nothing further.

24              PRESIDING OFFICER WEATHERSBY: Okay. Thank

1           you. Mr. Andrew, you are excused. Thank you  
2           very much.

3           MS. GEIGER: Could I ask a brief question  
4           on recross totally limited to the redirect done  
5           by Attorney Needleman?

6           MR. NEEDLEMAN: Madam Chair, I object.

7           MS. GEIGER: Really, it's just one question  
8           and it follows directly on the redirect, and  
9           I've been allowed to do this in other SEC  
10          proceedings.

11          MR. NEEDLEMAN: And I object because in my  
12          experience recross is not a part of SEC  
13          proceedings, and it certainly hasn't been in any  
14          of the ones I've done in the last 7 or 8 years,  
15          and I don't think it's fair in the process.

16          PRESIDING OFFICER WEATHERSBY: We're going  
17          to sustain the objection.

18          Mr. Andrew, you're all set. Thank you very  
19          much for your testimony.

20          We're going to take a 10-minute break and  
21          come back at 3:30 and we'll hear from the  
22          Environmental Panel. Thank you.

23                        (Recess taken 3:20 - 3:35 p.m.)

24          PRESIDING OFFICER WEATHERSBY: We're back

1 on the record. And you have a record request?

2 MS. DUPREY: I do, Madam Chair. I'd like  
3 to make a record request that we see a plan of  
4 the Gosling Autotransformer route. I can't find  
5 one in the many thousands of pages that we have.  
6 Given how much discussion there's been about it  
7 and also given my error in thinking that the  
8 northern route was in fact that route, I just  
9 want to for my own personal purposes be sure  
10 that I understand all of what we're talking  
11 about here, and I can't do that without having  
12 that plan. I would appreciate it.

13 MR. NEEDLEMAN: You're correct. I know  
14 there is not one in the record. I don't know  
15 what exists, but we'll take a look and see what  
16 we can find.

17 MS. DUPREY: Thank you.

18 PRESIDING OFFICER WEATHERSBY: Thank you.

19 MS. DUPREY: And I had also asked for a key  
20 for the plan that, Applicant's Exhibit 42.  
21 There are different demarcations in it, and I  
22 wasn't sure I entirely understood them.  
23 Particularly, there was some cross-hatching,  
24 maybe it's on Newington Exhibit 7 or this one,

1 I'm not sure which, if it's Newington Exhibit 7  
2 that has the cross-hatching, I guess that I  
3 would request that they provide it.

4 MR. NEEDLEMAN: Could I ask what  
5 cross-hatching you're referring to?

6 MS. DUPREY: I'm now looking at yours.  
7 It's on the left side of the plan so it's going  
8 to be the westerly side, connecting the red and  
9 the blue lines on the westerly side.

10 MR. NEEDLEMAN: We can provide some  
11 explanation. I think what you're looking at is  
12 just the overlap of the red and the yellow  
13 lines.

14 MS. DUPREY: All right. I didn't know if  
15 that meant something different. If that's all  
16 it is, I don't need anything more.

17 MR. NEEDLEMAN: I think that's it.

18 MS. DUPREY: Okay.

19 PRESIDING OFFICER WEATHERSBY: Okay. And  
20 this point I will not forget that the witnesses  
21 need to be sworn in. Still getting used to  
22 sitting in the center chair so thank you for  
23 your patience.

24 (Whereupon, **Kurt Nelson, Sarah Allen, Ann**

1                   **Pembroke, Dr. Craig Swanson and Bjorn**  
2                   **Bjorkman** were duly sworn in by the Court  
3                   Reporter.)

4                   **KURT NELSON, SWORN**

5                   **SARAH ALLEN, SWORN**

6                   **ANN PEMBROKE, SWORN**

7                   **DR. CRAIG SWANSON, SWORN**

8                   **BJORN BJORKMAN, SWORN**

9                   **DIRECT EXAMINATION**

10 **BY MR. NEEDLEMAN:**

11 Q     So I think the easiest thing will be to just  
12       work my way down the line with each witness and  
13       go through this with each one of you completely.

14               So Mr. Nelson, let me start with you. If  
15       you could state your name and where you work for  
16       the record?

17 A     (Nelson) Sure. My name is Kurt Nelson, and I'm  
18       a Licensing and Permitting Specialist for  
19       Eversource.

20 Q     And you should have two exhibits in front of  
21       you. The first is Applicant's 135 which is  
22       Joint Prefiled Testimony that was regarding the  
23       HDD issue, and that was filed on July 1st, 2018.  
24       Do you have that?

1 A (Nelson) I do.

2 Q And then the other is Applicant's 145 which is  
3 Joint Supplemental Testimony that you filed on  
4 July 27th, 2018, with Ms. Allen and Ms.  
5 Pembroke; do you have that?

6 A (Nelson) I do.

7 Q Do you have any corrections or additions to  
8 either of those pieces of testimony?

9 A (Nelson) I do not.

10 Q Do you swear to and adopt both pieces?

11 A (Nelson) I do.

12 Q So Ms. Allen, let me go to you next. You should  
13 have four exhibits in front of you. First will  
14 be Applicant's 15 which is your Prefiled  
15 Testimony dated April 12th, 2016.

16 Second would be Applicant's 78 which is  
17 your Amended Prefiled Testimony dated March  
18 29th, 2017.

19 The third is Applicant's 135 which is,  
20 again, Joint Prefiled HDD testimony with  
21 Mr. Nelson and Ms. Pembroke, July 1st, 2018.

22 And then next is Applicant's 145, again,  
23 the Joint Supplemental Testimony with Ms.  
24 Pembroke and Mr. Nelson, July 27, 2018.

1 Do you have all of those in front of you?

2 A (Allen) Yes. I do.

3 Q Before I ask you the next question, let me go  
4 back and ask you to identify yourself and state  
5 where you work?

6 A (Allen) My name is Sarah Allen. I'm a Senior  
7 Principal Scientist at Normandeau Associates.

8 Q With respect to the four pieces of testimony we  
9 just identified, do you have any changes or  
10 corrections to them?

11 A (Allen) I do not.

12 Q Do you swear to and adopt each piece?

13 A (Allen) Yes, I do.

14 Q Ms. Pembroke, let's go to you. If you could  
15 identify yourself and where you work?

16 A My name is Ann Pembroke. I'm a Marine  
17 Biologist, Senior Principal Scientist, at  
18 Normandeau Associates.

19 Q And you should have four pieces of testimony in  
20 front of you. The first is Applicant's 16 which  
21 is your Prefiled Testimony from April 12th,  
22 2016.

23 The next is Applicant's 79, your Amended  
24 Prefiled Testimony from March 29th, 2017.

1           You also have Applicant's 135 and 145 which  
2           are the two joint pieces of testimony I  
3           referenced a moment ago for the prior two  
4           witnesses. Do you have those in front of you?

5           A     (Pembroke) Yes, I do.

6           Q     Do you have any changes or corrections to any of  
7           those pieces of testimony?

8           A     (Pembroke) No, I don't.

9           Q     Do you swear to and adopt them today?

10          A     Yes, I do.

11          Q     Let me go to you, Dr. Swanson. You should have  
12          a single exhibit in front of you, Applicant 136,  
13          which is your Joint Prefiled Testimony with Mr.  
14          Bjorkman dated July 1st, 2018; is that correct?

15          A     That is correct.

16          Q     And again, going back for a moment. Could you  
17          identify yourself and your position for the  
18          record?

19          A     (Swanson) My name is Craig Swanson. I'm a  
20          Principal Associate at Swanson Environmental  
21          Associates.

22          Q     With reference to Applicant's 136, do you have  
23          any changes or corrections to that testimony?

24          A     (Swanson) I do not.

1 Q Do you swear to it and adopt it today?

2 A (Swanson) I do.

3 Q Finally, Mr. Bjorkman, if you could identify  
4 yourself, please, and where you work?

5 A (Bjorkman) My name is Bjorn Bjorkman. I'm  
6 Senior Ecotoxicologist with GEI Consultants.

7 Q And you also have Applicant's 136 in front of  
8 you which is your Joint Testimony with  
9 Dr. Swanson dated July first, 2018; is that  
10 correct?

11 A (Bjorkman) I do.

12 Q Do you have any changes or additions to that  
13 testimony?

14 A (Bjorkman) I do not.

15 Q Do you swear to and adopt it today?

16 A (Bjorkman) I do.

17 Q Thank you. All set, Madam Chair.

18 PRESIDING OFFICER WEATHERSBY: Thank you.  
19 And Ms. Frink, you may proceed. And first, I'd  
20 like to just thank everyone for accommodating  
21 Ms. Frink's schedule and allowing her to skip  
22 ahead in line. Thank you. Please proceed.

23 MS. FRINK: Thank you very much for  
24 allowing me to go first.

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**CROSS-EXAMINATION**

**BY MS. FRINK:**

Q This map, I believe, was prepared by Sarah Allen; is that correct?

A (Allen) It was prepared by Normandeau.

Q And you stamped it.

A I did.

Q You did.

MS. DUPREY: Exhibit number?

MS. FRINK: It's Exhibit 8. Frink Exhibit 8.

Q How are conservation lands marked on this map?

A (Allen) Conservation lands are shown by the yellow wedge marks.

Q Is there a reason why those markings don't extend all the way to the property line?

A (Allen) The best explanation is that these maps are put together using a series of GIS data. They never line up perfectly. It's simply a reference location where your property line is a little bit off from the conservation landline.

Q So what line is incorrect? Is it the conservation land boundary or the property line boundary?

1 A (Allen) I wouldn't hazard a guess that way. For  
2 a fully accurate map, you would need a ground  
3 survey.

4 Q Yesterday, on speaking with Mr. Bowes, we  
5 discussed the orange cross-hatching. Can you  
6 verify what that refers to?

7 A That's the Newington Center Historic District.

8 Q Right. And as I noted yesterday, should also  
9 extend to the property line as well as the  
10 conservation boundary. Both should be on the  
11 property line.

12 Could you please explain how access roads  
13 are marked on the map?

14 A (Allen) Access roads are shown as the red dashed  
15 line.

16 Q And as I look on the property that belongs to  
17 the Frink family, I see two red dashed lines.  
18 Is that representing two access roads or is it  
19 representing the width of an access road? What  
20 is that exactly?

21 A (Allen) In that location, it's representing two  
22 access roads.

23 Q So there would be two access roads to our  
24 property?

1 A (Allen) Yes. The intent is to allow one of the  
2 access roads for the actual excavation of the  
3 trench, and the second access road will allow  
4 construction equipment to move back and forth.

5 Q Is the actual trench excavation to take place  
6 between those two lines?

7 A (Allen) That I'm not sure. That's not the way  
8 we show it. And this has been reviewed by the  
9 engineers, but you would have to ask that  
10 question of the construction folks.

11 Q I wish I had. I'm going to proceed now to my  
12 Exhibit number 16, I hope to bring up. This  
13 represents what is marked as Newington Wetland  
14 number 16, and it's adjacent to the Knight's  
15 Brook Tributary, just to orient ourselves on the  
16 map. I think this is probably a question for  
17 Mr. Nelson. I'm asking where Eversource tested  
18 for water depth for groundwater depth on our  
19 property.

20 A (Nelson) So back in September of 2016,  
21 August/September time frame of 2016, Eversource  
22 contracted GEI Consultants to conduct a  
23 subsurface investigation on the Frink Farm  
24 property. As part of that investigation, there

1 were three boring locations, soil boring  
2 locations, that were finished as groundwater  
3 monitoring wells. There were three monitoring  
4 wells installed on the Frink Farm property that  
5 are still there today. They were spaced out  
6 throughout the farm field property. I'm sure we  
7 can reference a plan that shows those locations.

8 Q And you're confirming that those were done in  
9 the fall or I think it was early September of  
10 2016.

11 A Correct.

12 Q So that was before Eversource secured rights to  
13 the underground line; is that correct? Before  
14 the amendment was filed?

15 A (Nelson) I'm not sure of the timeline.

16 Q Just to clarify, I believe that they were  
17 positioned where the poles would have been for  
18 the overhead line if that had been the choice.

19 I'm going to move now to Exhibit Number 12  
20 which is Newington Wetland number 18.

21 This photograph shows wetland underneath  
22 the power line. I think you can see the power  
23 line. Is this a place where the groundwater  
24 depth measurement was taken?

1 A (Nelson) I believe there is a monitoring well in  
2 the vicinity of this wetland area.

3 Q Okay. And can you describe what happens when  
4 you excavate 8 feet deep for the farmland  
5 trench? Where would you expect to encounter  
6 groundwater?

7 A (Nelson) I'll have to reference the Soil and  
8 Groundwater Investigation letter report that was  
9 submitted on the record. Let me see if I can  
10 find that table. My recollection is that  
11 groundwater was relatively shallow.

12 So I'm looking at Table 3 that we provided  
13 in the Letter Investigation Report that we did  
14 on Frink Farm property. We measured groundwater  
15 depth on two separate occasions. Actually, I'll  
16 strike that. It looks like three occasions. We  
17 have some measurements from the August time  
18 frame, some from September of 2016. We also  
19 have, it looks to be a depth from April 2017 and  
20 then June 2nd of 2017. Would you like me to  
21 recite these groundwater depths?

22 Q I'd like you to clarify. You encountered  
23 groundwater at a depth that was well above the  
24 8-foot measurement that you would need to

1 excavate. In other words, when you dig this  
2 trench, is there going to be water in the  
3 trench?

4 A (Nelson) That is likely.

5 Q Thank you. And the proposed conditions filed by  
6 the Applicant, condition number 28, obligates  
7 Eversource to manage groundwater in the vicinity  
8 of Pease that might be impacted by PFCs.

9 In what areas in Newington have you tested  
10 the groundwater for PFC contamination? This may  
11 be a question for Mr. Bjorkman. You may have  
12 had some activity there, too.

13 A (Bjorkman) No, unfortunately, I was not involved  
14 in the Frink Farm part of the investigation.

15 A (Nelson) So the only area that this project has  
16 tested PFCs specifically is on the Frink Farm  
17 property. So we had the groundwater testing  
18 that we did at the three monitoring well  
19 locations that I described and also at the  
20 Knight's Brook Tributary on the Frink Farm  
21 property.

22 Q And in Hannah Lane subdivision, you also planned  
23 to build a line underground, and have you tested  
24 at all there for PFCs within the right-of-way?

1 A (Nelson) We have not.

2 Q Do you intend to do so before construction?

3 A (Nelson) We do not intend to do any more  
4 sampling with respect to PFCs, but what we've  
5 done through consultations with DES gaining an  
6 understanding of the fate transport of PFCs  
7 relative to Pease Air Force Base looking at some  
8 information that the DES provided us, we have  
9 submitted a revised Soil and Groundwater  
10 Management Plan in July of 2018, and that plan  
11 is predicated under the assumption that any  
12 groundwater that we encounter in the  
13 Newington/Portsmouth area is potentially  
14 impacted by PFCs.

15 Q So you are prepared to encounter PFCs as you  
16 excavate through our land and also through  
17 Hannah Lane. Would that be accurate?

18 A (Nelson) That is correct. For the record, the  
19 ground water sampling we did on the Frink Farm  
20 property we did have positive detections for  
21 PFCs. Those concentrations were below the DES  
22 ambient groundwater quality standard of 70 parts  
23 per trillion.

24 Q When was the last time that you conducted those

1 tests? Your most recent test date?

2 A (Nelson) I believe the most recent groundwater  
3 test was June of 2017.

4 Q Thank you. I'd like to switch now to the ELMO  
5 if I may.

6 This is Exhibit Number, Frink premarked  
7 Exhibit 14. Mr. Nelson, did you receive these  
8 testing results from me?

9 A (Nelson) Yes, I did.

10 Q So I believe I emailed them to you on June 6th.  
11 And the date of these, just for the record, is  
12 March of 2018. Can you read the numbers under  
13 the arrows? There's one for PFOS concentrations  
14 and one for PFOA, and I would like to know if  
15 those are above the EPA limits.

16 A (Nelson) Yes. The concentration for PFOS is 2.3  
17 parts per billion. The concentration of PFOA  
18 would be 0.79 parts per billion.

19 Q Per trillion, I believe.

20 A (Nelson) No. I believe these are parts per  
21 billion.

22 Q So these parts are above the acceptable EPA  
23 standard.

24 A (Nelson) These are above the New Hampshire

1 ambient groundwater quality standard, yes.

2 Q Yes. But this is not groundwater. Is that  
3 clear?

4 A (Nelson) Correct. This is surface water.

5 Q This is surface water from Knight's Brook  
6 Tributary.

7 A Um-hum.

8 Q So these levels are above the EPA limit. Quite  
9 significantly?

10 A (Nelson) The, to be honest I'm not sure about  
11 what the EPA guidance is with respect to surface  
12 water. I would, with respect to PFCs, I would  
13 certainly agree that these would be considered  
14 elevated concentrations of PFCs. Absolutely.

15 Q Mr. Bjorkman, do you have any further  
16 information or can you guide us at all here  
17 about the levels of concentration that you see  
18 in the chart?

19 A (Bjorkman) I have not actually seen this very  
20 chart previously, but I'm looking at it at this  
21 very moment, and certainly if those units are  
22 indeed parts per billion, those would be  
23 reasonably elevated levels of PFOS and PFOA. I  
24 do know, however, that in the previous rows

1 ahead of that it has, I can't read if it's 2030  
2 or what the units are there. If it's 2.03 or  
3 2030. It's not, little fuzzy for my eyes.  
4 Maybe if I put my glasses on.

5 Q I'll see if I can move this to make it a little  
6 easier to read.

7 I think it says there that all  
8 concentrations are in micrograms per liter if we  
9 look at the lower left. Can you see that?

10 A (Bjorkman) Yes. Okay.

11 Q Good.

12 A (Bjorkman) And what's your question?

13 Q Did I understand you correctly to say that these  
14 levels of PFOA and PFOS are considerably above  
15 the EPA standard?

16 A (Bjorkman) I would say they are above the  
17 standard for drinking water.

18 Q Um-hum.

19 A (Bjorkman) I am not sure about the level for  
20 ambient water quality criteria for other  
21 purposes, but I would certainly conclude from  
22 this information, knowing nothing else, that  
23 there certainly is presence of PFAS in this  
24 surface water.

1 Q Yes, and they are also significantly above the  
2 ambient groundwater quality standards.

3 Mr. Nelson, I think we're back to you. How  
4 do you conduct dewatering of this sort of  
5 contaminated water? How will this be treated or  
6 handled? The trench is going to be excavated  
7 right underneath the Knight's Brook Tributary so  
8 you're going to be right here in the water.

9 A (Nelson) Right. So we've provided a detail  
10 depicting our methodology so I just would like  
11 to just briefly describe the Knight's Brook  
12 Tributary so everybody can sort of get a mental  
13 picture.

14 The tributary is on the western side of the  
15 Frink Farm property. It's within a wetlands  
16 complex surrounded mostly by cattails. It's a  
17 fairly well defined stream channel. I would  
18 estimate it's about on the order of knee deep or  
19 so and on the order of perhaps three feet wide.  
20 So it's a fairly well-defined channel.

21 For the Committee's information, the reason  
22 that my understanding of why there's elevated  
23 PFC concentrations in the stream has to do with  
24 the nature of hydrogeology where the sources at

1 Pease, the PFC hot spots, if you will, at Pease  
2 tend to be in the deeper groundwater, aquifer  
3 areas. Where you have a spring situation, there  
4 is an upwelling. So the impacted groundwater  
5 from Pease is sort of traveling in deeper ground  
6 water and sort of upwelling at the spring  
7 locations, and that is why the concentration in  
8 this tributary is higher than what's encountered  
9 in the groundwater of the surrounding soil area.

10 So as far as methods, we're fully aware of  
11 the levels of PFCs in the tributary. The data  
12 that Ms. Frink sent me is consistent with the  
13 data that we tested for back in September of  
14 2016. The 2016 data, we had a total of 3.75  
15 parts per billion. The data collected by the  
16 Air Force was 3.09 parts per billion. So  
17 definitely similarities there.

18 But as far as our plan for crossing the  
19 tributary, what we're proposing is essentially a  
20 cofferdam setup bypass pumping flows from the  
21 stream to a downstream location, giving  
22 ourselves enough of a work envelope to trench  
23 across the stream.

24 One of the things we have in our favor is

1 the nature of the soils on the Frink Farm  
2 property. Our soil investigation indicates that  
3 the soils are comprised of silts and clays and  
4 are very cohesive. So we think that will be a  
5 favorable with respect to trenching, and the  
6 hydraulic conductivity analysis that was done  
7 tells us that we should not expect large volumes  
8 of groundwater flow in the overburden soils.

9 Q Mr. Nelson, I believe you were present in some  
10 negotiations with the Rockingham County  
11 Conservation District and the MOU that was  
12 signed with them, the whole Soil and Groundwater  
13 Investigation Report and so forth. That  
14 obligates Eversource to truck away and dispose  
15 of excess soil. Do you anticipate encountering  
16 excess soil here that would also be  
17 contaminated?

18 A (Nelson) Our results of our soil investigation,  
19 we did not encounter any PFCs in soils. We  
20 tested for a number of potential contaminants.  
21 The one potential contaminant, if you will, that  
22 we detected was arsenic at a concentration of 12  
23 parts per million. The DES standard and  
24 background standard is 11 parts per million. In

1 our opinion, that's consistent with background.

2 There was concern, I remember, in our  
3 discussions that we did not take soil samples in  
4 close proximity to the Knight's Brook Tributary  
5 so as part of our soil management strategy, we,  
6 and in discussions with RCCD and the Frinks, we  
7 are agreeing to remove all excess soils from the  
8 Frink Farm property, regardless of whether we  
9 have data that supports it's clean or not.

10 Q For the Committee's benefit, could you please  
11 clarify what RCCD refers to and what their role  
12 is here with the Frink Farm and Eversource?

13 A (Nelson) Sure. Rockingham County Conservation  
14 District. They, I believe, are the easement,  
15 conservation easement holders --

16 Q Yes. That's correct.

17 A (Nelson) -- on the Frink Farm property. So we  
18 through the process of working with the Frinks  
19 and RCCD to amend the conservation easement on  
20 the Frink Farm property, we had met and had  
21 discussions pursuant to the Soil and Groundwater  
22 Management Plan on the Frink Farm property. Our  
23 mutual agreement was consummated in an MOU that  
24 was executed in December of 2017.

1 Q I understood from Mr. Bowes that the plan is to  
2 work constructing the trench on the farm from  
3 August into October of 2019. Do you have any  
4 knowledge of how the concentrations of these  
5 contaminants or the depth of groundwater may  
6 vary during that period of construction?

7 A (Nelson) Generally speaking, late fall, I would  
8 say, late summer time frame one might expect  
9 groundwater levels to be slightly depressed, but  
10 that's very much weather dependent. I think  
11 it's hard to say with any specificity, not  
12 knowing what the weather conditions are like.

13 Q And this was a very rainy day.

14 A (Nelson) Correct. Exactly. Yes.

15 Q So it's hard to know.

16 A (Nelson) We know from the groundwater monitoring  
17 that was done, we did look for a seasonal  
18 variation. I believe when we did our initial  
19 groundwater monitoring wells and/or sampling or  
20 testing for groundwater elevations, it was in a  
21 very dry spell in September and so we had some  
22 what I guess we would consider depressed  
23 groundwater elevations. We did go back in the  
24 spring timeframe and regauge those wells and saw

1 an increase in groundwater elevations.

2 Q I believe that the Soil and Groundwater  
3 Investigation and Management Plan mentions two  
4 options that I'd like to ask if you could  
5 explain a little better. One of them says that,  
6 if necessary, groundwater may be temporarily  
7 stored on-site into a fractionation or frack  
8 tank. I'd like to hear first about that. And  
9 what is a frack tank. How does it function?

10 A (Nelson) Okay. A frank tank is simply a holding  
11 vessel. They can vary in size. I believe a  
12 standard size for a large construction project  
13 may be on the order of 20,000 gallons, typically  
14 constructed of steel. That tank, so any  
15 groundwater encountered during trenching would  
16 be pumped into that vessel. And then the  
17 purpose of a frack tank is it gives flexibility  
18 during construction.

19 We, in the Soil and Groundwater Management  
20 Plan, we wanted to give ourselves two options,  
21 and those options would be dependent on the  
22 volumes of groundwater that we'll encounter  
23 during the construction process. If we have  
24 relatively limited amounts of groundwater that

1 we encounter during the dewatering process, one  
2 option that we would potentially use is  
3 essentially using that truck and transporting  
4 groundwater directly off, taking that into a  
5 transport truck and just transporting it  
6 offsite.

7 The other option is to pump into a holding  
8 tank and that groundwater could either be  
9 treated on-site and discharged under a NPDES  
10 permit to a surface water area. In the case of  
11 the Frink Farm, that would be, we'd look to use  
12 the Knight's Brook Tributary as a discharge  
13 point, given that it's already impacted by PFCs,  
14 but there would be some level of treatment with  
15 respect to filtration for fines, et cetera.

16 Through the NPDES permitting process, we  
17 would be required to do some level of analysis  
18 on that water before it was discharged to the  
19 surface water body.

20 Q Is the frack tank, just to clarify, is that a  
21 treatment installation or is it simply a storage  
22 tank where the water is held until it's  
23 discharged into the brook?

24 A (Nelson) The tank itself is just a holding

1 vessel.

2 Q The frack tank. Is that correct?

3 A (Nelson) Correct. It's just a holding vessel.  
4 So with respect to ultimately disposing of that  
5 groundwater, one option that we would have would  
6 be getting a treatment system in line with that  
7 vessel and discharging directly to Knight's  
8 Brook Tributary or we could use that frack tank  
9 as a holding vessel as we periodically encounter  
10 groundwater, and then pumping that groundwater  
11 out of that vessel into transport trucks and  
12 disposing of that groundwater at a treatment  
13 facility offsite.

14 Q And where might such a treatment facility be  
15 located? I know that offsite disposal is  
16 mentioned in this plan, and I also know that  
17 Pease has refused to take any groundwater  
18 generated by this process that might be  
19 contaminated.

20 A (Nelson) That is correct. We were hopeful that  
21 the Pease Air Force base would allow us to use  
22 their treatment system to dispose of this excess  
23 groundwater. They were not willing to do that.  
24 So we will be looking for alternatives. At this

1 time we have not identified a facility  
2 specifically. I believe there are potentially  
3 local wastewater treatment plans that may be  
4 able to accept this groundwater, but we have not  
5 positively identified that facility yet.

6 Q I'd like to ask if you can give us any estimate  
7 of cost connected with the procedures that we've  
8 heard about. So we've heard about testing the  
9 excess soil for contamination, testing the  
10 water, possible use of a frack tank, possible  
11 offsite disposal. What do the costs of this  
12 sort of environmental obligation add to the cost  
13 figures that we were hearing about for  
14 Mr. Andrew earlier today?

15 A (Nelson) I don't have those figures. I'm not  
16 sure. My understanding is those costs have been  
17 accounted for in the overall project cost.

18 Q I'm going to move now to Exhibit Number 15 which  
19 shows the Knight's Brook Tributary that we've  
20 just been speaking of. You described this, I  
21 think, as a fairly well-defined stream, and we  
22 can see it here, Knight's Brook Tributary, and  
23 in the background you see the power poles  
24 clearly in the right-of-way. Did you authorize

1 this clearcut through our wetlands?

2 A (Nelson) Is the date stamp on that picture?

3 Q The date stamp on the photo is August 5th. I  
4 believe the clearcut was done in late July.

5 A (Nelson) I believe this may have been associated  
6 with some vegetation maintenance work that was  
7 done on an adjacent parcel in crossing through  
8 the Frink Farm property. I don't know that  
9 there was a vegetation cut through the wetland.  
10 There would have been no need to do that.

11 Q Does this look like a vegetation cut was done?

12 A (Nelson) I can't say for sure from the picture.

13 Q Really. Was there a purpose to clearcutting the  
14 100-foot-wide right-of-way at this time?

15 A (Nelson) Yeah, my understanding of that  
16 situation was that there was a concern with  
17 respect to reliability of the existing  
18 distribution line in the corridor.

19 Q In our corridor?

20 A (Nelson) Correct.

21 Q On our property?

22 A (Nelson) Not on your property, no. On the  
23 adjacent property.

24 Q What was the purpose then of cutting on the

1 Frink property?

2 A (Nelson) As I said, I am not aware that there  
3 was cutting on your property. I was not part of  
4 that work. I do know that there was discussions  
5 with, between the crews that were doing  
6 vegetation maintenance and Mr. John Frink about  
7 the crossing, and I know that there was some  
8 level of coordination between Eversource  
9 contractors and Mr. Frink.

10 Q Mr. Frink gave permission for the contractors  
11 working on the adjacent property to exit through  
12 our land. He had no knowledge whatsoever of  
13 clearcutting or any cutting on our land. We  
14 were not notified of the cutting. We were asked  
15 about permission to cross the land, and he gave  
16 that permission, but there was no word about the  
17 cutting.

18 MR. NEEDLEMAN: Objection. That's  
19 testimony, Madam Chair.

20 PRESIDING OFFICER WEATHERSBY: The  
21 objection is sustained.

22 MR. FRINK: Thank you.

23 BY MS. FRINK:

24 Q This is my premarked Exhibit number 11, and I

1 think I need to apologize. It should be marked  
2 as right-of-way clearcut looking east. It may  
3 say west on the original that you may have.

4 Mr. Nelson, do you recall a meeting at the  
5 RCCD office in Brentwood that was on June 21st,  
6 2016?

7 A (Nelson) I recall, I don't remember the exact  
8 date. I do remember having meetings, yes.

9 Q Yes, and do you know the substance of this  
10 discussion?

11 A (Nelson) I assume that particular meeting was  
12 pursuant to working through the conservation  
13 easement amendment.

14 Q Yes. That's correct. Thank you. And we had  
15 some discussion then about the transition tower.  
16 It was the very, very first that we'd heard  
17 about the 75-foot monopole. You suggested  
18 something to us at that time about tree  
19 planting. Do you recall that?

20 A (Nelson) I do.

21 Q And I think that what you suggested was planting  
22 some trees to screen the monopole. What kind of  
23 trees were you suggesting that would screen the  
24 75-foot-tall transition tower?

1 A (Nelson) I was, I was suggesting, so basically  
2 when it comes to screening, what the utility's  
3 criteria is, it was making sure that we have  
4 sufficient clearance distance from that riser  
5 structure, given that there is going to be a  
6 transition from overhead to underground on the  
7 Frink Farm property. The current clearing, if  
8 you will, so where we have overhead  
9 right-of-way, our maintenance standards is to  
10 want to keep that hundred-foot-wide corridor  
11 clear as much as possible.

12 Where we transition to underground, our  
13 tolerance for tall tree vegetation, we can have  
14 much further encroachment of tree vegetation  
15 into that hundred foot corridor. So my  
16 suggestion was to, that assuming we have  
17 sufficient horizontal distance away from the  
18 riser structure, so in the east/west direction,  
19 so likely planting where you see that pine tree  
20 in that picture, somewhere in that area,  
21 assuming we have enough horizontal distance away  
22 from the riser structure that there could be any  
23 sorts of tall growing trees planted in that  
24 area.

1 Q How long might it take for tall growing trees to  
2 reach a 75-foot height?

3 A (Nelson) Good question. Don't know off the top  
4 of my head. I know that it probably would be,  
5 you know, that it would be reasonable to plant  
6 trees of three-inch caliper that may be 10 feet  
7 to start out with and could reach heights of 20,  
8 30, 40 feet in the span of, I'm guessing, ten  
9 years or so. To attain the height of 75 feet,  
10 I'm not quite sure. You know, you can reference  
11 the growth rates of the various tree species  
12 that you're planting. In a full sun area like  
13 this, you can expect for certain species to have  
14 fairly considerable vertical growth over a  
15 ten-year to 20-year time frame. Can't say for  
16 sure how long it's going to take to get to 75  
17 feet.

18 Q This, I think you just said this is a clear sun  
19 area. Did I hear that correctly?

20 A Correct.

21 Q What we're looking at on the slide.

22 A Correct.

23 Q How tall would you say that pine tree would be?

24 A I would estimate that to be about 35 feet or so.

1 Q And how tall are the distribution poles? Are  
2 they 35 feet, 40 feet?

3 A (Nelson) That's my estimation for the pine tree.

4 Q The pine tree has been there about 50 years, and  
5 it hasn't yet obscured the line.

6 A Okay.

7 Q Thank you very much. That ends my questions.

8 PRESIDING OFFICER WEATHERSBY: Thank you,  
9 Mrs. Frink. Now we'll hear from Attorney Patch  
10 for the Town of Durham.

11 **CROSS-EXAMINATION**

12 **BY MR. PATCH:**

13 Q Good afternoon. My name is Doug Patch. I'm  
14 counsel for the Town of Durham and the  
15 University of New Hampshire. And so the  
16 questions that I have, unless I indicate  
17 otherwise, would basically be for anybody on the  
18 panel.

19 The first question I have is with regard to  
20 Little Bay. And is it fair to say that it's  
21 part of the Great Bay Estuary?

22 A (Pembroke) Yes. It is part of the Great Bay  
23 Estuary.

24 Q And I would ask you if you could take a look at

1 one of the exhibits that Durham has marked, and  
2 it is Exhibit TD-UNH 12, and it is a Technical  
3 Support Document for the Great Bay Estuary dated  
4 March 27th of 2017, a document prepared by the  
5 New Hampshire Department of Environmental  
6 Services, and I'm looking at page 4 of that  
7 document.

8 Is it fair to say that the Great Bay  
9 Estuary has been designated by EPA as an estuary  
10 of national significance under Section 320 of  
11 the Clean Water Act?

12 A (Pembroke) Could you point out where it says  
13 that in this exhibit? I know that the Great Bay  
14 Estuary is considered a national estuary of,  
15 national estuarine research reserve.

16 Q Well, maybe if we begin sort of near the top  
17 of -- unfortunately, the lines aren't numbered,  
18 but it refers in this report to the Federal  
19 Water Pollution Control Act and the requirements  
20 that are imposed on states to submit two surface  
21 water quality documents to EPA every two years.  
22 Are you familiar with that process?

23 A (Pembroke) No.

24 Q You're not. Okay. You see here where it

1 describes what the purposes of those two  
2 different reports that are referenced in there?  
3 And are you familiar at all with the -- and it  
4 isn't just you, Ms. Pembroke, but anybody on the  
5 panel could feel free to contribute to this.

6 Are you familiar at all with the Water  
7 Quality Act of 1987?

8 A (Pembroke) Yes.

9 Q Are you familiar with the requirements that that  
10 imposes on states with regard to surface water  
11 quality documents?

12 A (Pembroke) No. I'm not.

13 Q I think Mr. Bjorkman is nodding his head.

14 A (Bjorkman) I'm familiar in general terms with  
15 the issues you raise here although I have not  
16 been particularly privy to the exhibit you're  
17 showing right now.

18 Q Okay. But you're generally familiar with what  
19 is required under that federal law?

20 A (Bjorkman) In general terms.

21 Q And that the state is required to essentially do  
22 an analysis of the extent to which surface  
23 waters provide protection and propagation of a  
24 balanced population of shellfish, fish and

1 wildlife, and allow recreational activities in  
2 and on the water is what it says here. Is that  
3 your understanding as well?

4 A (Bjorkman) That is the goal of the review that  
5 is being conducted, that is conducted here, yes.

6 Q And this document goes on to say that DES  
7 assesses all available data for lakes, rivers  
8 and estuaries every two years, and then it  
9 further says, if you look down here toward the  
10 bottom of the page, that the Great Bay Estuary  
11 constitutes approximately 86 percent of all New  
12 Hampshire estuaries; did I read that correctly?

13 A (Pembroke) Yes.

14 Q And that it is a national treasure and a  
15 valuable resource to the state. Did I read that  
16 correctly?

17 A (Pembroke) Yes, you did.

18 Q And as such, it has been designated by EPA as an  
19 estuary of national significance under Section  
20 320 of the Clean Water Act?

21 A (Pembroke) That's what it says.

22 Q Do you have reason to disagree with that?

23 A (Pembroke) No, I don't.

24 Q And then it further says that it cites this 2013

1 State of the Estuaries report. Are you familiar  
2 with that report? Any of you?

3 A (Bjorkman) I am.

4 Q Okay. And that report, according to this  
5 report, said that the Great Bay Estuary has all  
6 the classic signs of eutrophication.

7 A (Bjorkman) That's what it says.

8 Q Do you agree with that?

9 A (Bjorkman) From my reading of this document, as  
10 well as the 2017/2018 update to it, it does  
11 appear that eutrophication is considered one of  
12 the problems that causes the estuary to be in a  
13 303(d) list.

14 Q And when we talk about eutrophication, it has a  
15 colon there, and it you talks about increasing  
16 nitrogen concentrations, low dissolved oxygen  
17 and disappearing eelgrass habitat. Is that your  
18 understanding of what eutrophication is?

19 A (Bjorkman) That is not what eutrophication is,  
20 but it can be a consequence of eutrophication.

21 Q Okay. So what would you say eutrophication is  
22 then?

23 A (Bjorkman) Eutrophication is the addition of  
24 nutrients into a system in such a way that it

1 triggers great growths of phytoplant.

2 Q Okay. And eutrophication leads to the three  
3 things that we just went over in that report?

4 A (Bjorkman) In the current situation, that could  
5 be consequences of eutrophication, all three of  
6 those, yes.

7 Q Is it fair to say that EPA and DES are both  
8 attempting to reduce nitrogen loading in Great  
9 Bay and Little Bay?

10 A (Bjorkman) That is my --

11 A (Pembroke) That is definitely true.

12 A (Bjorkman) That's my understanding, too.

13 Q Would you agree that digging three trenches in  
14 Little Bay through a combination of an  
15 excavator, hand divers or hand jetting and jet  
16 plowing as proposed for this Project will  
17 degrade the water quality in Little Bay?

18 A (Bjorkman) I do not agree with that.

19 A (Pembroke) Or do I.

20 Q Even on a temporary basis?

21 A (Pembroke) A very temporary basis.

22 Q How temporary?

23 A (Pembroke) Each jet plow pass, as we heard from  
24 the Construction Panel and as is indicated in

1 the Sediment Plume Modeling Report, it lasts  
2 less than a day. And the plume that's produced  
3 by the jet plow lasts no more than a couple of  
4 hours in any given location, and at no point in  
5 time is the entire bay crossing clouded with  
6 excess sediments that were disturbed by the jet  
7 plow.

8 Q And is there any way in which the jet plowing or  
9 the other forms of excavation that will be used  
10 to dig the trenches will increase nitrogen  
11 loading?

12 A (Bjorkman) I would point out that the  
13 Intervenors have in various documents brought up  
14 this issue as a concern and relating to the fact  
15 that there could be an increase in nitrogen  
16 concentrations being released from the sediment.  
17 Upon review of that material, and I think that  
18 DES has introduced monitoring conditions as part  
19 of the program to make sure that does not  
20 happen.

21 In my personal view, it is not necessary  
22 for such conditions, but I understand the need  
23 for implementing something along those lines to  
24 make sure that it doesn't happen, but because

1 the amount of nitrogen that can be released  
2 under reasonably foreseen circumstances will not  
3 materially affect the Little Bay as a whole,  
4 Great Bay Estuary as a whole or for that matter  
5 anything at all more than very locally and very  
6 ephemerally.

7 Q Has this been the subject of discussions with  
8 DES?

9 A (Pembroke) Yes, it has.

10 Q And which of you on the panel have been involved  
11 in those discussions?

12 A (Nelson) I have.

13 A (Allen) The three of us have.

14 Q Mr. Bjorkman, you have not been part of those?

15 A (Bjorkman) I have not personally been involved  
16 in those discussions with DES.

17 Q Could you tell us what those discussions were  
18 with DES and what the result of those were?

19 A (Allen) Regarding nitrogen?

20 Q Yes.

21 A (Allen) The specific discussion about nitrogen  
22 is primarily related to water quality  
23 monitoring. We have proposed a water quality  
24 monitoring plan. We've discussed the components

1 of that plan with DES, and from their final  
2 conditions we will be revising our plan to date  
3 and submitting it for further approval.

4 Q And when will that happen?

5 A (Allen) That will happen probably some time this  
6 winter. We have a timeline. We have to submit  
7 it within either 90 days or 60 days. I'm not  
8 remembering right now.

9 Q So it will be submitted at a time when none of  
10 the parties to this proceeding and the Committee  
11 won't actually see it?

12 A (Allen) It's a DES review. Yes.

13 Q Okay. And then DES will make the final  
14 determination as to whether or not there's any  
15 inappropriate nitrogen loading as a result of  
16 jet plowing?

17 A (Allen) I can't speak to it being final, but I'm  
18 sure that DES will make a recommendation to the  
19 SEC.

20 Q When would that be?

21 A (Allen) I don't know the answer to that. They  
22 will review our plan, and then provide their  
23 opinion on that.

24 Q And so that would be after the order is issued

1 by this Committee, presumably, assume for a  
2 minute that it's an order approving the  
3 construction of the Project. Then you're saying  
4 that this plan and the results from DES would be  
5 submitted to the Committee after that?

6 A (Allen) That's very likely. That's not uncommon  
7 for a DES permit to proceed that way.

8 Q And what would the purpose of that be after the  
9 order had already been issued?

10 A (Allen) Well, presumably the SEC understands  
11 that DES would be providing the review. If SEC  
12 needs to put some additional conditions on that,  
13 they can, but as I say, that's the normal  
14 process for a DES permit to go forward.

15 Q Is it the normal process for the SEC to  
16 reconvene after an order has been issued to  
17 review an agency report?

18 A (Allen) I'm not sure I can answer that.

19 Q Can anybody answer that on the panel?

20 A (Allen) I think you have to ask the SEC.

21 Q Well, I'm not about to ask the SEC. Thank you.

22 So back to the trenches then, are there  
23 three different trenches or is it basically one  
24 60-foot wide trench?

1 A (Pembroke) It's three trenches.

2 Q And it's within a 60-foot-wide swath. Is that  
3 correct?

4 A (Pembroke) Yes.

5 Q So what DES has determined is that there will be  
6 a wetland impact of 60 feet wide across Little  
7 Bay; is that fair to say?

8 A (Allen) That's for temporary impacts, yes.

9 Q Now, in terms of sediment dispersion, obviously  
10 that's going to be caused by digging the  
11 trenches either by an excavator, by a hand  
12 jetting or by the jet plow. Is that fair to  
13 say?

14 A (Allen) The sediment dispersion will not be  
15 generated by the trenching. That will be done  
16 during dry conditions.

17 Q During what?

18 A (Allen) Dry conditions when the water, when the  
19 tide water is not flooding the site.

20 Q So that's when sediment dispersion -- there will  
21 be no sediment dispersion otherwise; is that  
22 what you're saying?

23 A (Allen) There will not be sediment dispersion  
24 from the trenching portion of the work.

1 Q Okay. What will cause the sediment dispersion  
2 though?

3 A (Pembroke) The jet plow.

4 Q The jet plow.

5 A (Pembroke) Primarily.

6 Q The propelling of water into or to make the  
7 trenches.

8 A (Pembroke) That's correct.

9 A (Swanson) In fact, to be clear, it's not going  
10 to be a trench. The route is fluidized. So  
11 it's not what one would consider an open cut  
12 through the bottom.

13 Q So it's only a trench in the tidal flats then, I  
14 guess, is what you're saying?

15 A (Pembroke) In the upper tidal flat, yes.

16 Q In the upper tidal flats. I mean, is the only  
17 impact as a result of jet plowing then, we've  
18 talked a little bit about potential for impact  
19 on nitrogen and impact on suspended solids. Are  
20 there any other impacts as a result of the jet  
21 plowing or of the excavator or of the hand  
22 jetting?

23 A (Pembroke) They're temporary impacts to the  
24 benthic organisms. Those are the fauna that

1 live in or on the sediment surface that's being  
2 disturbed by the mechanical passage of  
3 construction equipment. And adjacent to the jet  
4 plow passage, some sediment will drop out of the  
5 water column, and there will be some minor  
6 burial and covering of the sediment. So some  
7 organisms that are located there may or may not  
8 be able to burrow their way out of those  
9 sediments. But again, there would be a  
10 temporary effect.

11 Q And what about the concrete mattresses? Will  
12 they have more than a temporary effect?

13 A (Pembroke) The concrete mattress will be a  
14 permanent installation. They will be a  
15 conversion of benthic habitat from soft  
16 substrate sediments to artificial hard  
17 substrate.

18 Q And in terms of impacts from the concrete  
19 mattresses, as I understand it, the latest  
20 estimate of the number of square feet that could  
21 result in permanent wetland impacts is 8681  
22 square feet; is that correct?

23 A (Allen) That's correct.

24 Q And just for the record, I find that in Exhibit

1 133, page 16.

2 As you said in your Prefiled Testimony, and  
3 I think this is Ms. Allen or Pembroke or  
4 Mr. Nelson, Exhibit 145, page 3, line 19, the  
5 number I just gave you is an increase of over  
6 3331 square feet over previous estimates. Is  
7 that fair to say?

8 A (Pembroke) That's approximately.

9 A (Allen) That's about right.

10 A (Pembroke) Can't do the subtraction in my head.  
11 Sorry.

12 Q Well, I mean, there's no subtraction. I think  
13 it was just a statement that was made in your  
14 testimony, and I can get you there if that would  
15 be helpful.

16 A (Pembroke) Oh, I see it.

17 Q You see it?

18 A (Pembroke) Line 19 on page 3?

19 Q Yes. So you said that was an increase of over  
20 3300 square feet basically, right?

21 A (Allen) Correct.

22 Q And why such a significant increase in the  
23 square footage for the concrete mattresses?  
24 What caused this?

1 A (Allen) When we originally submitted the  
2 Application, we did not have detailed near-shore  
3 data. We since collected that detailed  
4 near-shore data so we had a better sense of the  
5 depth of shallow bedrock which would inhibit  
6 being able to lay the cables to the full depth.

7 A (Pembroke) I'd like to add that by "we," Ms.  
8 Allen means the Project, and Durocher was the  
9 construction team that actually sought that  
10 information.

11 Q And there was a question asked yesterday about  
12 possible tinting of the mattresses with a color  
13 that would make them less visually intrusive.  
14 Do you know what they would be tinted with?  
15 What chemical?

16 A (Allen) I do not.

17 Q And whether or not that would have any impact on  
18 the organisms or other fauna or whatever in the  
19 bay?

20 A (Allen) That would certainly be a reasonable  
21 question. We would ask that, and we understand  
22 the importance of that.

23 Q But it's not something that's been looked into  
24 at this point in time?

1 A (Allen) Not that I'm aware of.

2 Q And what about, are there any existing concrete  
3 mattresses in Little Bay to your knowledge?

4 A (Allen) Not that I know of.

5 Q So none that were put in as a result of a cable  
6 that has already been put under Little Bay and  
7 has been there for a number of years?

8 A (Pembroke) No.

9 A (Allen) Again, not that I'm aware of.

10 Q So this is a whole new permanent impact to  
11 Little Bay, and these are new devices, whatever  
12 you want to call them, that are being put there  
13 that have never been there before; is that fair  
14 to say?

15 A (Allen) These are not new devices. These are  
16 tried and true in the industry, but you're  
17 correct that there are none in Little Bay.

18 Q Okay. They're new to Little Bay is what I was  
19 suggesting.

20 A (Allen) Correct.

21 Q Now, over the course of this proceeding, there  
22 have been a number of changes, I believe, that  
23 you have made in your sedimentation estimates  
24 that you've made in various reports. Is that

1 fair to say?

2 A (Swanson) Yes. That's true.

3 Q Okay.

4 A (Swanson) Between the initial monitoring report  
5 and the revised monitoring report.

6 Q So are there two different reports that cover  
7 that or are there more than that or how many  
8 revisions have been made?

9 A (Swanson) There has been one revision to the  
10 original report.

11 Q Okay. And that's the Exhibit 104, the June  
12 30th, 2017, Revised Sediment Dispersion Modeling  
13 Report?

14 A (Swanson) Yes. June 2017 is the date on it.

15 Q And that's the one you stand by today; is that  
16 right?

17 A (Swanson) Correct.

18 Q And what's the burial depth that is assumed in  
19 that report?

20 A (Swanson) It varies. It's three and a half feet  
21 in certain areas and five feet in others.

22 Q And so the burial depth, I think, was originally  
23 anticipated to be 8 feet in Little Bay. Is that  
24 your understanding?

1 A (Swanson) Yes.

2 Q And do you know when that changed?

3 A (Swanson) I do not.

4 Q Do you know why it changed? Well, I'm sorry.  
5 Ms. Allen, looked like you had an answer to that  
6 earlier question.

7 A (Allen) I can tell you that we made the change  
8 in summer of 2017.

9 Q Summer. So that was before the Revised Sediment  
10 Dispersion Modeling Report dated June 30th of  
11 '17?

12 A (Allen) Correct.

13 Q And why was that made, do you know, the change  
14 in depth?

15 A (Allen) Well, I think the Construction Panel  
16 addressed that.

17 Q But was it made because of concerns about  
18 sediment?

19 A (Allen) That was certainly one of the concerns  
20 is that by reducing the depth of the cable we  
21 would be able to be putting less sediment into  
22 suspension.

23 Q So that's not just the Construction Panel, is  
24 it? That's this panel.

1 A (Allen) Oh, that's correct.

2 Q I thought you just said it was because of  
3 concerns the Construction Panel had.

4 A (Allen) No, I'm saying I believe this was  
5 addressed by the Construction Panel.

6 A (Pembroke) It was the Construction Panel that  
7 confirmed that it was acceptable in terms of  
8 safety to the cable to be able to reduce the  
9 burial depth.

10 Q So as a result of the change in burial depth,  
11 how did that change the plume that would result  
12 from jet plowing?

13 A (Swanson) It changed the resulting plume by  
14 reducing the mass of sediment that would be  
15 fluidized, and, therefore, mobilized up into the  
16 water column.

17 Q So it would have changed the results in the  
18 Sediment Dispersion Modeling then, too, right?

19 A (Swanson) That's correct. Yes.

20 Q How significantly?

21 A (Swanson) I didn't do an actual comparison, but  
22 it would be roughly by at least a third since  
23 you're reducing the volume by about a third, if  
24 my calculations are correct.

1 Q And that Revised Sediment Dispersion Modeling  
2 Report also addressed the issue of the impact of  
3 winds on sediment dispersion, did it not?

4 A (Swanson) The analysis that we did determined  
5 that the effect of wind in Little Bay during the  
6 September/October period would be essentially  
7 insignificant.

8 Q I'm sorry. I missed the very end of that.

9 A (Swanson) Would be essentially insignificant  
10 relative to the large tidal currents that do  
11 occur in Little Bay.

12 Q Wouldn't that depend on the wind speed?

13 A (Swanson) Exactly.

14 Q So you're saying based on estimates of wind  
15 speed, not including gusts, that, you know, that  
16 you think would be insignificant?

17 A (Swanson) Not estimates. Actual data. We took  
18 data from the Pease weather station and looked  
19 at the last, I believe, ten years' worth of data  
20 for that two-month period to determine what is  
21 the distribution of wind speed and direction  
22 over that time period.

23 Q Did DES share your lack of concern about wind  
24 speed?

1 A (Swanson) I believe they have, I know they have  
2 added a condition to the permit that there is a  
3 limitation on the wind speed of 15 miles per  
4 hour where the environmental monitor has to make  
5 a decision of whether the jetting can occur  
6 under those conditions.

7 Q So obviously they had, they didn't share your  
8 view that it was insignificant?

9 A (Swanson) To the extent you would have extreme  
10 winds, the data we looked at did not indicate  
11 that there would be any significant amount of  
12 extreme winds.

13 Q Doesn't that depend though to some degree, the  
14 impact of the winds, on the direction out of  
15 which the winds are generated? Whether it's  
16 north, northwest, south or southwest?

17 A (Swanson) Exactly. And most of the winds are  
18 coming from the west which is the shortest  
19 distance across Little Bay. Most of the time it  
20 would not be an issue.

21 Q I noticed that use the word "most." Most of the  
22 time, you said.

23 A (Swanson) 36 percent of the time winds come out  
24 of the west, I believe 20 percent from south and

1 north, and the remainder coming out of the east.

2 Q So Exhibit 166, I'm sorry, I think is the latest  
3 correspondence from DES to this Committee which  
4 contains at least the current view of DES about  
5 what conditions the Committee should impose; is  
6 that fair to say?

7 A (Swanson) I don't have it in front of me, but I  
8 know there's a condition.

9 Q And I guess you just referenced that DES had  
10 some, in that particular Exhibit I would point  
11 to conditions 53 and 54, and I think you said  
12 that DES had some provisions that were included  
13 in the proposed conditions that deal with the  
14 issue of winds. Is that correct?

15 A (Swanson) That's correct. Yes.

16 Q So those two conditions are the ones that deal  
17 with the issue of wind speed and winds and what  
18 at least the DES is saying about what ought to  
19 be done about it?

20 A (Swanson) Right, right, and those conditions, I  
21 believe, have been accepted by the Applicant.

22 A (Pembroke) I'd like to point out that in the  
23 letter submitted by DES on August 31st, 2018, to  
24 the panel, they stipulated that the

1 Environmental Monitor and the New Hampshire DES  
2 will discuss the prevailing wind condition 12  
3 hours before jet plow passage to determine  
4 whether or not it would be acceptable to operate  
5 in a higher range.

6 Q Could you explain to us what the sediment loss  
7 rate is?

8 A (Swanson) Sediment loss rate is perhaps a bit of  
9 a misnomer. It's really the mobilization rate  
10 of the fraction of material that has been  
11 fluidized in the sediment. So it's the amount  
12 of the sediment that then gets mobilized up into  
13 the water column during the jet plowing process.

14 Q And that's something that is addressed in the  
15 revised modeling report that we've already  
16 mentioned?

17 A (Swanson) In both reports.

18 Q And so the sediment loss rate that is estimated  
19 to occur when the jet plowing is being done is  
20 what?

21 A (Swanson) Is 25 percent of the volume that's  
22 been fluidized.

23 Q I think on page 53 of Exhibit 104, unfortunately  
24 I'm having a problem calling it up here on my

1 computer, but on page 53 of that revised  
2 modeling report, I think it refers to the fact  
3 that previous studies have shown loss rates as  
4 high as 35 percent. Is that fair to say?

5 A (Swanson) There has been a limited amount of  
6 data that has been collected on that, and so the  
7 range that we used in order to present a  
8 sensitivity is between ten percent and 35  
9 percent.

10 Q So you chose 25 as being sort of middle of the  
11 range.

12 A (Swanson) I chose 25 because that is typical of  
13 what has been used in other analyses, both  
14 modeling and review, and I believe that has been  
15 also verified by other witnesses to this  
16 proceeding.

17 Q But there's the potential for it to go as high  
18 as 35 percent, is that fair to say, based on  
19 what those previous studies say?

20 A (Swanson) That's a possibility, yes, although  
21 the information that has been, I've read, has  
22 been that even the 25 percent is a conservative  
23 number.

24 Q And I know, Ms. Pembroke, I think you said

1 earlier when I was asking questions about the  
2 temporary impacts of the jet plowing in terms,  
3 from a sediment perspective, but I'm looking at  
4 page 56 of the revised modeling report where it  
5 says that resuspension of fine grain sediments,  
6 quote, "is likely to be resuspended on  
7 subsequent tides and dispersed from the areas  
8 initially affected by deposition unless  
9 flocculation of the clay particles occurs and  
10 they remain in place."

11 So if I understand that correctly,  
12 flocculation of clay materials, if there's a  
13 fair amount of clay in what's being stirred up  
14 by the jet plows, then that's not a  
15 sedimentation concern because they won't  
16 disperse the way other sediments would; is that  
17 fair to say?

18 A (Swanson) The flocculation is where they come  
19 together in larger particles, and the essence of  
20 particles in really any type of water body is  
21 that the larger the particle, the faster it will  
22 settle to the bottom.

23 Q And so to the extent that there are clay  
24 particles there, then they grab on to some of

1 the other particles and they drop to the bottom  
2 quicker; is that the idea?

3 A (Swanson) That's correct.

4 Q So in terms of the flocculation, are there tests  
5 that have been done or is there an analysis  
6 that's been done as to what the soil that will  
7 be disturbed by the jet plows will have from a  
8 flocculation perspective?

9 A (Swanson) I think that has been done generally  
10 but not for the specific sediments in Little  
11 Bay.

12 Q So that's really one of those things that you  
13 really don't know until you get in there what  
14 the impact will be; is that fair to say?

15 A (Swanson) Well, that's one of the reasons for  
16 doing the trial of the jetting process.

17 Q Okay. The jet plow trial run, which will, how  
18 extensive will that be?

19 A (Pembroke) It will cover a thousand feet and it  
20 will cover, start on the western tidal flat and  
21 cross into the channel areas so it will cover  
22 representative sediment types and water depths.

23 Q But obviously it won't tell you what they would  
24 encounter over the full 6000 feet of digging the

1 trenches, correct?

2 A (Pembroke) No. And that's one of the reasons  
3 that this sediment plume model that Dr. Swanson  
4 was responsible for made the conservative  
5 assumption that there would be no flocculation  
6 of the clay particles. Therefore, he assumed  
7 all sediment particles remained in the water  
8 column for the maximum possible time based on  
9 their size and settling characteristics.

10 Q I want to shift gears for a minute and talk  
11 about Essential Fish Habitat. Which of you on  
12 the panel were involved in preparing the  
13 September 19th, 2017, submission which is marked  
14 as Applicant's Exhibit 131?

15 A (Pembroke) Well, that was actually prepared by  
16 someone else at Normandeau, but I can speak to  
17 it.

18 Q And this was a supplement to Appendix 38 which  
19 had been prepared and submitted with the  
20 original Application in 2016. Is that fair to  
21 say?

22 A (Pembroke) I'm sorry. I was pawing through  
23 papers.

24 Q So my question was whether the September 19th,

1 2017, submission, Exhibit 131, which is the EFH,  
2 Essential Fish Habitat Revised Assessment, was a  
3 supplement to Appendix 38 which had been  
4 submitted with the original Application in 2016.

5 A (Pembroke) I'm afraid I don't remember the  
6 Appendix numbers, but it was a supplement that  
7 was filed in September 2017.

8 Q Do you recall whether that original Appendix  
9 contained any references to the impact of  
10 magnetic fields on or EMF, electromagnetic  
11 fields, on Essential Fish Habitat? And I will  
12 just note for the record the first time I saw it  
13 was in the September of 2017 report.

14 A (Pembroke) Yes. I don't know if the original  
15 analysis contained that, but I see on page 8 of  
16 this EFH document that it does discuss that.

17 Q Okay. And so can you tell us what caused the  
18 Applicant or the Applicant's consultants,  
19 Normandeau, to do analysis of the magnetic field  
20 impact on Essential Fish Habitat? Why was that  
21 done in September of 17 but not done originally?

22 A (Pembroke) I can't say that I can answer that  
23 question.

24 Q Can anyone on the panel answer that question?

1 (No verbal response)

2 Q I don't see anyone volunteering. So you don't  
3 know if that was because DES asked you to do it  
4 or some other consultant suggested you do it or  
5 you don't know why that was done then?

6 A (Allen) I can tell you DES did not ask us to do  
7 that.

8 Q They did not.

9 A (Allen) No.

10 Q Well, you reference page 8, and I'm going to  
11 read something from that and ask you if I'm  
12 correct. It says the buried cables have the  
13 potential to emit magnetic fields into the  
14 sediments and overlying water column. Says  
15 demersal pelagic fishes, including some EFH  
16 species, potentially could be exposed to these  
17 fields, particularly in the shallow portions of  
18 the crossing where cables will be buried with  
19 only 3.5 feet of cover.

20 Did I read that correctly?

21 A (Pembroke) Yes, you did.

22 Q And then it goes on to say, and I'm going to  
23 read this. Normandeau et al. ( 2011) found,  
24 however, that the magnetic fields emitted from

1 low voltage AC cables such as the SRP are  
2 unlikely to be detectable by most fishes.

3 Did I read that correctly?

4 A (Pembroke) Yes, you did.

5 Q Now, the study that is cited in Exhibit 131 is  
6 the one, I believe, found in the references on  
7 page 10, and it says that it was done by  
8 Normandeau in 2011 on the effects of EMFs from  
9 undersea power cables, and it was done for the  
10 Bureau of Ocean Energy Management. Are you  
11 familiar with that study at all?

12 A (Pembroke) Yes, I was the Project Manager.

13 Q It's a pretty long study. I googled it, and  
14 it's 426 pages. But we have marked excerpts  
15 from that study for identification as TD-UNH 14.  
16 I don't know if you have access to that.

17 A (Pembroke) Well, I have a copy of the report  
18 here.

19 Q Okay.

20 A (Pembroke) Somewhere in there. But it's, you  
21 know, a personal copy so I don't have your  
22 markings on it.

23 Q I'll cite to you pages from that report and  
24 hopefully you can find them in what you have.

1           For example, I'm looking at page 1, it's  
2           the Executive Summary. And it says  
3           anthropogenic electromagnetic fields, EMFs, have  
4           been introduced into the marine environment  
5           around the world and from a wide variety of  
6           sources for well over a century. Despite this,  
7           little is known about potential ecological  
8           impacts from the EMFs. For decades, power  
9           transmission cables have been installed across  
10          bays and river mouths and connecting near-shore  
11          islands to the mainland with little  
12          consideration of possible effects to marine  
13          species or EMFs.

14           Did I read that correctly?

15          A     (Pembroke) Yes, you did.

16          Q     There's a number of other excerpts that we have  
17          included in our study, and I would like to read  
18          them all in the record, but it would take a  
19          rather long time so I'll just mention a couple  
20          of pages and read just a couple more.

21           On page 6 and page 11, but the one I'd like  
22           to focus on is actually on page 69, and it says,  
23           quote, "Existing information provides convincing  
24           evidence that a variety of fishes in addition to

1 elasmobranch" -- elasmobranches?

2 A (Pembroke) Those are sharks.

3 Q And it says see section 4.2.2. "Can detect  
4 electric or magnetic fields or both."

5 Did I read that correctly?

6 A (Pembroke) Yes, you did.

7 Q Now, that sounds to me like it's directly  
8 contrary to how this report was characterized on  
9 page 8 of Exhibit 131 where it says that this  
10 2011 report found that the magnetic fields  
11 emitted from low voltage AC cables such as the  
12 SRP are unlikely to be detectable by most  
13 fishes.

14 A (Pembroke) I can explain the reason it says  
15 that.

16 Q Okay.

17 A (Pembroke) Later in the Durham exhibit, the EMF  
18 report that I prepared in 2011, there's  
19 discussion on ways, engineering approaches to  
20 mitigating the exposure risk to marine organisms  
21 from EMF, and Dr. William Bailey will be here  
22 next week, I believe. He conducted, he worked  
23 on this Project with me, and he conducted EMF  
24 modeling for the SRP Project so he can expound a

1 bit more.

2 But two of the major mitigating factors are  
3 sheathing that's placed around the cable  
4 prevents a direct electric current from escaping  
5 the cable and burial under the sea floor because  
6 the magnetic field decays with distance from the  
7 source, and so those two factors reduce the  
8 actual electromagnetic fields that can reach the  
9 water body.

10 Q Well, you talked about mitigation, and, again,  
11 I'm in the same report from 2011. It's an  
12 excerpt on page 128 in our exhibit, and it says,  
13 and I'm quoting, "The mechanisms by which  
14 magnetic fields are detected are poorly  
15 understood, limiting the ability to develop  
16 suitable mitigation measures."

17 Did I read that correctly?

18 A (Pembroke) I can't immediately find the place  
19 that you're reading from.

20 Q It's page 128.

21 A Yes. There's several headers. Can you tell me  
22 under what heading you're reading? Are you  
23 talking about page 128? Or 28? I'm sorry.

24 ADMINISTRATOR MONROE: I think it's PDF 28

1 in TD Exhibit 14.

2 Q What I just read to you is page 128.

3 A (Pembroke) Is that a PDF page number?

4 Q It's a page number, I believe, from the report  
5 because it's the, it's right from the report.  
6 It's not a PDF number. So it says 128 at the  
7 bottom of the page.

8 A (Pembroke) Okay.

9 Q And under magnetosensory biology.

10 A (Pembroke) Okay.

11 Q The first sentence. "The mechanisms by which  
12 magnetic fields are detected are poorly  
13 understood, limiting the ability to develop  
14 suitable mitigation measures."

15 Did I read that correctly?

16 A (Pembroke) Yes, you did.

17 Q And you said you were a Project Manager on this  
18 report?

19 A (Pembroke) Yes, I was.

20 Q And I want to read to you one more quote from  
21 this. It's on page 132. And it's, there's kind  
22 of a bolded section at the bottom. Cable  
23 Configuration. And it says, "Greater mutual  
24 cancellation of the magnetic fields from cables

1 is achieved by placing the cables close together  
2 because of the vector nature of magnetic fields.  
3 Placing the cables close together not only  
4 reduces the peak magnetic field, but it  
5 increases the rate at which the field diminishes  
6 with distance from the cables."

7 And then it goes on to say, "Sometimes  
8 submarine cables are extended by horizontal  
9 directional drilling from shore in conduits to  
10 minimize disturbances in shallow waters before  
11 emerging as separate cables."

12 Did I read that correctly? I left out one  
13 sentence in between obviously.

14 A (Pembroke) Yes.

15 Q So does the current SRP design, layout and cable  
16 specification in your opinion optimize the  
17 potential reduction of EMF in the field? Or is  
18 there more that could be done to reduce the EMF  
19 exposure?

20 A (Pembroke) I have to tell you that this is in an  
21 engineering section of this report that was  
22 prepared by Dr. Bailey. So I believe that he  
23 would be better able to answer that question.

24 Q So in Exhibit 131 there's a discussion of how

1 Eversource, and this is on page 8, Eversource  
2 has agreed to perform magnetic field  
3 measurements upon completion of the Project. Is  
4 that your understanding?

5 A (Pembroke) That's what it says.

6 Q And it says a plan for this monitoring has not  
7 been established at this time, but it will be  
8 provided to regulatory agencies for review and  
9 comment when it is prepared.

10 Is that still the case?

11 A (Pembroke) To the best of my knowledge, it is.

12 Q So there's no plan for monitoring EMF that's  
13 been done, and apparently there are no plans to  
14 submit that to this Committee before it makes a  
15 decision; is that fair to say?

16 A (Pembroke) That appears to be the case. It is  
17 not one of the requirements under the DES  
18 conditions, permit conditions.

19 Q Right. So it's not mentioned at all in either  
20 the DES quote, unquote, "Final Decision" in  
21 February of this year nor is it mentioned in the  
22 August 31 DES response, is it? There's nothing  
23 about --

24 A (Pembroke) No. There's nothing in there about

1 EMF monitoring.

2 Q So there's no indication of what would be  
3 considered to be an EMF issue. What particular  
4 measurement would be considered to have exceeded  
5 whatever standards there might be. There's  
6 nothing at all, we have no information about  
7 that. There's nothing in the record about that.  
8 Is that fair to say?

9 A (Pembroke) To the best of my knowledge there are  
10 no standards set for exposure of marine fishes  
11 to EMF.

12 Q So what would be the point of submitting a plan  
13 then?

14 A (Pembroke) Well, in the report that was prepared  
15 by the Bureau of Ocean Energy Management, there  
16 was a recommendation that at least a subset of  
17 Projects of new submarine cables should monitor  
18 EMF so that they can help validate the model and  
19 improve predictive capabilities for future  
20 Projects.

21 Q Do you know whether concrete mattresses affect  
22 the magnetic field?

23 A (Pembroke) They would affect the magnetic field  
24 by providing additional distance between the

1 source and any receptors.

2 Q So the more concrete mattresses the better, from  
3 that perspective.

4 A (Pembroke) Well, yeah, but I'm not sure that I  
5 would advocate for piling up concrete mattresses  
6 on top of concrete mattresses.

7 Q So if somebody, this Committee or DES, has to  
8 choose between protecting EMF, you know, by  
9 putting more concrete mattresses in or fewer  
10 concrete mattresses which have impacts on  
11 organisms within the bay, somebody's got to make  
12 that choice, right?

13 MR. NEEDLEMAN: Objection. That's not what  
14 the record reflects.

15 MR. PATCH: I'll withdraw the question.

16 BY MR. PATCH:

17 Q I'd like to move on to bald eagles and other  
18 species of special concern.

19 PRESIDING OFFICER WEATHERSBY: Attorney  
20 Patch, this might be a good time to break for  
21 the day since you're changing subjects.

22 MR. PATCH: Okay.

23 PRESIDING OFFICER WEATHERSBY: It's 5:00.  
24 We'll come at it fresh on Thursday. Thank you.

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We will adjourn for the day.

(Hearing recessed at 5:05 p.m.)

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C E R T I F I C A T E

I, Cynthia Foster, Registered Professional Reporter and Licensed Court Reporter, duly authorized to practice Shorthand Court Reporting in the State of New Hampshire, hereby certify that the foregoing pages are a true and accurate transcription of my stenographic notes of the hearing for use in the matter indicated on the title sheet, as to which a transcript was duly ordered;

I further certify that I am neither attorney nor counsel for, nor related to or employed by any of the parties to the action in which this transcript was produced, and further that I am not a relative or employee of any attorney or counsel employed in this case, nor am I financially interested in this action.

Dated at West Lebanon, New Hampshire, this 23rd day of September, 2018.

\_\_\_\_\_  
Cynthia Foster, LCR